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HOW TO REASON OR THE
A B C OF LOGIC

HOW TO REASON

OR

The A B C of Logic

REDUCED TO PRACTICE

IN ANALYZING ESSAYS, SPEECHES, BOOKS

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TO THIS IS ADDED

AN APPENDIX ON

FALLACIES

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How to reason, or, The ABC of logic :



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RELEASE

REV. RICHARD C. BODKIN, C.M.

FIFTH EDITION (TENTH THOUSAND)

Dublin

BROWNE AND NOLAN, LIMITED

NASSAU STREET

1911

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NOTE TO THIRD EDITION (SPECIAL).

IT was with extreme pleasure that I heard from my Publishers that at length this little book has reached the people for whom it was originally intended, I mean the pupils in our Elementary and Secondary Schools, and that many Schools have shown themselves quite eager to adopt it. This is what I was particularly anxious for, as it is my own deep and unalterable conviction that **every child of intelligence after the age of 13 should read some of this subject.**

This is also the opinion of men like Jevons, Whately, Quick and Mill. Jevons says: "**Undoubtedly** it ought to find some place in **every Course of Education.**" Whately says: "**No subject could be** more calculated to facilitate study." Quick remarks: "Analysis should be practised in **all** schools, in **all** subjects." Mill says: "I can find **no excuse** for omission to study it on the part of **anyone** who aspires to **succeed** in any intellectual pursuit."

It is "Analysis" or the "Making of Abridgments" that **forces** one to **think**, that makes one distinguish what is important from what is not so, that enables one to see what is the **structure** of a Short Story or Poem, or Essay or Speech, and that enables him, on this account, to remember its points, and see their relation to each other, and how one depends on the other; in a word, that enables him to know what is the meaning of all he reads.

There were, however, I was sorry to hear, in the former Editions one or two Extracts to which some persons objected, and which prevented some Schools from adopting the book as a Class-book. These I have now completely removed, and I flatter myself at present that there is nothing that can possibly offend the most sensitive.

In conclusion, I should like to remark that the title of my little book may, perhaps, be misleading and deterrent. The book should, in truth, be called, "**How to make an Abstract of what you read.**"

If I myself had to teach the subject to very young people, I should by no means begin at the beginning, at page 1, but I should rather commence at page 101—"How to make an Abstract of a **Single Sentence.**"

After this I should proceed to Section II., page 107, and teach my pupils "**How to make an Abstract of a Short Story or Poem**"; "**How a Story is built up,**" and "**How they might build up a Story for themselves,**" pages 110-113. Also, I should teach them "**How to make an Analysis of a Lesson in Grammar, History, Natural Philosophy,**" etc., pages 115-117. **Much good work** and **very good work** could be done in this way though the pupils never read anything about Sections III. and IV., or even about Logic.

The whole subject is exceedingly simple, and can be learned by an intelligent person in two or three weeks, if not in as many days.

PREFACE TO SECOND EDITION.

THE rapid sale in the course of a few months of the First Edition of this little book, consisting as it did of 2,000 copies, seems to prove conclusively that it met a want. And yet I am inclined to believe that it has not yet reached the class for whom it was mainly intended, I mean the boys and girls of intelligence in our Secondary Schools between the ages of 14 and 18. The vast majority of these will have no opportunity in after life of reading a course of Logic, though the study of it is most important for their success in life.

For myself, I must certainly confess that I can never regard our Educational System as in any way satisfactory until it is made obligatory in the schools for every person of intelligence above the age of 14 to study the subject treated of in this little book.

Nor am I alone in this opinion.

Jevons says "*Logic ought undoubtedly to find some place in every course of Education.*" And

again "Every boy," he remarks, "is made to learn Mathematical Problems which he will *never want*, and is left in total ignorance of the most simple processes of reasoning which will enter into the thoughts of EVERY HOUR."

Whately says "Logic is REQUISITE for ALL."

And Mill declares "that he can find NO EXCUSE for omission to study it on the part of ANYONE."

Only two reasons can be adduced for the omission to study this MOST NECESSARY and yet MOST NEGLECTED subject. These are—1. That it is difficult. 2. That it requires too much time.

These objections, I believe, have been conclusively disproved by this little book. Even a poor labouring man in London writes to say, "I find your book 'How to Reason' very clear and instructive, and have great hopes of its proving very helpful to me."

Two weeks' study for an hour each day will be amply sufficient to master everything in this little treatise except the Appendix, which need not be read by many.

In this Second Edition I have made considerable

alterations, especially by laying practical stress on the "Making of Abstracts." This part I have re-arranged, re-written, and transferred from the Appendix to the body of the book. In fact, to speak out my mind plainly, I regard this as the all-important point, and the part that most particularly differentiates this treatise from all others on the subject. In a word, I regard nearly every other part of the book as merely enabling a person to make Abstracts of Proofs, etc., most efficiently. If persons knew thoroughly how to analyse what they read and write with ease it would be of more advantage to the vast majority than any other part of their education.

Whately, Lacordaire, Bossuet, Fénelon, Samuel Bailey, Morley, Quick, all are unanimous on this point.

Whately says, "If you want to KNOW Logic ANALYSE some of Euclid's Demonstrations, etc." And again, "For students NO EXERCISE COULD BE DEvised more calculated to facilitate their study."

Quick says, "It should be practised in ALL SCHOOLS and in ALL SUBJECTS."

And Samuel Bailey remarks that "the difficulty of REDUCING an ARGUMENT to a Syllogism is the GREAT DIFFICULTY which the searcher of the truth has to cope with. The validity or invalidity of an argument is EASILY DISCERNED when the argument is REDUCED to TWO or THREE Propositions."

"Fallacies never occur," he continues, "when the premises are clearly and fully stated in JUXTA-POSITION with the conclusion." (This, of course, is done by ANALYSIS.)

"If the argument were clearly expressed," he remarks in another place, "and if the premises and conclusion were clearly expressed and brought into JUXTA-POSITION the bad reasoning would be too manifest to impose on a child."

And yet, notwithstanding all this, strange to say, there is no book dealing systematically with the subject. It is to try to supply this crying want that I have written this little treatise. I have sketched out in it a very graduated course of Analysis, beginning with the analysis of a simple sentence, and then going on to the analysis of a

number of sentences, or a paragraph, or short story, and proceeding after this to the analysis of a proof or of a number of proofs, or of a speech or book.

In conclusion, I will remark that if I had to teach any young persons this subject, I should begin with the analysis of a single sentence at p. 101, and then go on to the analysis of a short story or a lesson in Grammar, etc. Not till I had finished these two parts, and come on to Section III., p. 125, should I require them to learn anything of Logic. MUCH GOOD WORK and VERY GOOD WORK can be done in analysis before coming to the point at which Logic becomes a necessity. It is only when you come to treat of PROOFS that we require it.

Having reached this point, however, I should then insist that the pupil would go back to p. 1, and read about Propositions and Syllogisms, and especially how to reduce a Proposition in Euclid to a Syllogism, p. 63.

PREFACE TO FIRST EDITION.

John Stuart Mill, in his famous *Inaugural Address*, at St. Andrew's, makes use of the following remarkable words:—"Of Logic, I venture to say that there is no part of Intellectual Education of greater value, or whose place can be so ill-supplied by anything else." Again he says: "I can find no excuse for the omission to study it on the part of anyone who aspires to succeed in any intellectual pursuit." "Logic," he adds, "is the great dispenser of hazy and confused thinking. It clears up the fogs which hide from us our own ignorance, and makes us believe we understand a subject when we do not."

These are strong words from such an authority on Education, and to many they may seem to be grossly exaggerated statements, but I think in the end they will be found to be the expression of sober, earnest truth. Applied Logic, is to my mind, the most necessary and important of all branches of Education. It is one of the very few subjects that is ever used in after-life. Most of us, when we enter

into society, will not be expected to know Latin, Greek, or Mathematics, but all of us must reason every day, and every hour of the day, if we mean to succeed in life's battle.

On this point of the necessity and importance of Logic all those best qualified to judge are unanimous, *v.g.*, Whately, Jevons, Pascal, Hamilton, etc.

Whately says: "That this branch of study is requisite for all, and is attainable by all, and presents not necessarily any greater difficulties than the rudiments of Arithmetic, Geography and Grammar—all this cannot be so well evinced in any other way as by experiment."¹

Jevons, in his *Elementary Lessons on Logic*, says: "Logic is the most simple and elementary of all sciences. It ought, therefore, undoubtedly to find some place in every course of Education. Yet every schoolboy is made to learn Mathematical problems, which he will never employ in after-life, and is left in total ignorance of the most simple processes of reasoning which will enter into the thoughts of every hour. Logic should take its place as an indispensable study for

¹ *Easy Lessons*, Preface, p. iii.

every well-informed person."¹ (Boy or girl, young man or young woman.)

John Morley, in his *Essay on Culture*, says:—"If this Logic is so important and even so necessary, why is it not more studied? Chiefly for two reasons, first, because people do not realize that it is so necessary, and secondly, because they regard it as very difficult, and suited only to those that are very clever and far advanced in their studies? Besides, they think that it would require a *great deal of time* to derive much benefit from the study of this subject."

Now, all these ideas are quite false. The simplicity of Logic is amply testified to by the above quotations—and the time required for the study of Logic is abnormally short. John Stuart Mill says: "When I consider how very **simple** Logic is, and how **short** a time is sufficient for acquiring a **thorough knowledge** of its **principles** and rules, and even considerable expertness in applying them, I can find **no excuse** for omission to study it on the part of **anyone** who aspires to succeed in any intellectual pursuit."²

Again he says, "You can **easily** learn Logic in a few weeks."³

¹ Preface, p. ii.

² Address, p. 27.

³ Page 23.

In the Preface to the *Port Royal Logic* we find that “a person entertaining a young nobleman mentions that he had known a person who in fifteen days made him acquainted with the greater part of Logic. One of the company replied that if any one would take the trouble he would engage to make him acquainted in four or five days with all that was **any use** in Logic. The attempt succeeded, for the young nobleman having reduced the work to **four** tables easily learnt one a-day **without ever** *having need of any one* as instructor.”

It may here be objected with great force that if Logic be so easy and simple—if it can be learned in so short a time, what is the cause of the failure in teaching it, for failure there is without any manner of doubt. Referring to this subject Whately writes : “We sow **many seeds** to obtain a **few** flowers.” “The truth is,” he continues, “that by **far** the **greater** part of students pass through the University without knowing **anything at all** of this subject, Logic. They understand **nothing whatever** of the principles. And this is the case with a **considerable proportion** of those candidates who obtain testimonials, including **many** who gain

distinction. They neither **are** nor **think** they **are** at all benefited by their so-called Logical Education. They treat the subject (afterwards) with contempt as a mere tissue of empty jargon."

The Author of the *Port Royal Logic* asserts that "of a thousand who learn Logic there are not ten who remember anything of it for six months."

No person with any experience of logical students can have any doubt as to the truth of these statements. What, then, it may be asked, is the cause of this failure? Have we not many good, nay, even excellent treatises on Logic? Have we not Primers of Logic and Easy Lessons on Logic, written too by men of acknowledged ability? Undoubtedly. What more, then, do we want? I admit all this, but still I think it cannot be denied that whatever their excellences, and they are many, they have not, as a matter of fact, reached the masses, they have not made the subject so easy, so simple, and so concise that the man or woman of average ability can read it and master it with ease and without an instructor. And until this is done much remains to be desired. Put any of the ordinary treatises on Logic into the hands of the average man, and he will find it so bristling with technical terms, so difficult in its explanations, and so little applied to

any useful end, that he will throw it up after a short time as full of hard terms and utterly useless. This, at least, is my experience, and hence the present effort.

Why do these excellent manuals fail? Chiefly, I think, because they aim at too much. They are too good, too exhaustive, too complete, too fundamental. They teach everything, they let no point escape. They do not distinguish, sufficiently, between the important and the unimportant, above all they do not apply their rules for Syllogisms, etc., to common every-day examples, and to the making and testing of proofs and to analysis in general. Like the boy with the nuts, they attempt too much and they gain nothing.

I hope to gain my end by pursuing quite an opposite course. I will write a most incomplete book. I will leave out everything that is not essential. I will dwell on the great important points at great length. I will explain them in the simplest terms. I will eschew all difficulties. I will even sacrifice accuracy to simplicity; and finally, I will try to make my readers apply constantly these few simple easy rules to most important and useful examples.

I will try to do what a great teacher of Practical

Arithmetic might do, who would insist that nearly all the ordinary problems of Arithmetic can be solved by the application of five or six very simple rules, viz., Addition, Subtraction, Multiplication, Division, and Proportion ; who would show that all problems in Practice, Interest, Discount, Insurance, etc., can be reduced to these ; and who would insist on making his students perfect masters of these few simple rules.

Following this method, I shall rigorously exclude all mention of Moods and Figures, Subcontraries and Subalterns, Exceptive and Exclusive Propositions, Sorites and Dilemma, and even Categorematic and Syncategorematic Terms. I shall not even treat of Fallacies, except in the Appendix, as these are not necessary, and do little more than give names to violations of the rules of Syllogisms, or, at least, of Right Reasoning.

I shall confine myself to teaching the **least possible** ; but, then, I shall try to give my readers a thorough grasp of whatever is important, and to give them ease in applying the rules. As Whately says, "Here it is that most fail." It is of little importance to know the rules of Syllogisms by heart if we never employ them. The important thing is to use these rules constantly and with

scrupulous exactness, and to find out by their aid whether an argument is a good argument or not. As Whately puts it: "If you want to **know** Logic, analyse logically some of Euclid's Demonstrations, etc."

In conclusion, I have only to remark, what must be clear on the surface to everyone, that this little pamphlet is not intended as a treatise on Logic. Its object rather is to teach people as much Logic, and that in the simplest form, as will enable them with ease to analyse any speech, Essay, or Book. It is not intended for those who have time, leisure, and opportunity to study the subject thoroughly, but rather for that numerous class of people who feel keenly that they labour under great disadvantages from not having made a proper study of Logic, and who have now but little time at their disposal to remedy this defect.

So far from wishing that people would confine themselves to the study of this little treatise I have the hope that it will introduce them to better and higher works and will enable them to understand them and derive from their study the benefits these should bestow.

IMPORTANT DIRECTIONS FOR USING THIS BOOK.

Let the Student read the first time from p. 1 to p. 21, where he is told "What a Proposition is—What are its parts—How Many kinds of Propositions there are, and How the Attribute is taken."

Then he might read from p. 30 to p. 38 to see "What a Syllogism is—What is the test of a Good Syllogism, and What are the Principles on which Syllogistic Reasoning depends."

When this is done, he might with advantage, slip on to p. 49 and read about Hypothetical Syllogism up to p. 53.

After this, let him study very carefully again and again Logical Analysis from p. 61 to p. 71. He might then read on from p. 99 to p. 140.

No other part is necessary except perhaps on The Making of Abstracts from p. 85 to p. 98.

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A B C OF LOGIC.

INTRODUCTION.

Logic may be called the “**Science of Proof.**” That is, it is the Science which enables us to know when an argument is a good one and when it is a bad one.

How does it do this ?

Very easily ; it shows that all arguments, no matter how long or how complicated, can be condensed into three very simple sentences. When the argument is reduced to this form (which is called a Syllogism) you can easily detect whether it is good or bad. In fact, Logic lays down three very simple rules, and by the careful application of these to any argument it will appear whether it is valid or invalid.

If this is so, Logic should clearly consist of **two** parts—

One in which we learn **how to test** a **Syllogism** when made.

And another in which we learn **how** to **reduce** any argument to the **form** of a **Syllogism**.

Of these two parts I shall now proceed to treat in order. And first of the Syllogism.

A **Syllogism** is a **form of argument** consisting of **three Propositions**, and only three; but then these three Propositions must be such that if you admit the first Proposition and the second Proposition you must admit the third.

From this we see at once that if we mean to understand the Syllogisms well, we must begin with the study of the Propositions. **Propositions** and **Syllogisms** may be said to compose the whole of this part of Logic, as far as we are concerned.

PART I.

SECTION I.

PROPOSITIONS.

CHAPTER I.

My object in treating of Propositions is that the student may learn how to make out the precise meaning of any assertion he may meet with.

Unless he knows this clearly he will not be in a position to assent to the truth of a Proposition or to deny it. If any one should say that "Birds sing" you cannot know whether you should assent to or deny his statement until he informs you what precisely he means by it. If he means to assert that "All birds sing" then you deny his statement; if, on the contrary, he only asserts that "Some birds sing," then you admit it,

A Proposition is a sentence in which something is affirmed or denied of some other thing.

Affirmation or denial then is essential to a Proposition, and no sentence can be a Proposition unless it affirms or denies.

V.G. : "John is good;" "James struck the table." These are Propositions, for both are sentences, and in the first we affirm "goodness" of John, and in the second we affirm of James that "he struck the table."

There is no need of any further explanation.

Everyone knows what a sentence is, and each one can easily find out whether it affirms or denies.

(Give many examples of Propositions, and point out whether they affirm or deny.)

EXAMPLES.

All dogs bark. All metals are good conductors of heat. All great musicians are men of culture. Some books are dangerous. One bad general is better than two good ones. Most young people are wanting in common sense, though they believe they are infallible.

*See Additional Easy Examples at the end of this book.

N.B.—Of course if there is nothing affirmed or denied in a sentence then that sentence is not a Proposition.

Hence a sentence that contains merely a question or a command, an exclamation or a wish, is not a Proposition. The following sentences—"Where are you going?" "What o'clock is it?" "Would that I were dead!" "Come down," are not Propositions, because they make no assertion.

Mark those sentences, etc., that are Propositions amongst those that follow, and mark those that are not. Give a reason for your answer in each case.

EXAMPLES.

This caused John to faint with terror. James was as flurried at this act of defiance as John had been. The world is a looking glass and gives back to every man the reflection of his own face. Frown at it and it will look sourly at you, laugh at it and it will laugh with you.

First rank advance. Let us all sing. Attack the enemy, and having broken through the ranks put them to flight. As I was walking in the park yesterday. Having crossed the river and attacked the enemy. Hearing a noise and perceiving at the same time two men running towards them.

Whilst I was showing him through the house and directing his attention to the various treasures of art we possessed.

*See Additional Easy Examples at the end of this book.

A Proposition consists of three parts—the Subject, the Attribute, and the Copula.

V.G. : “John is good.” Here John is the **Subject**, the word “is” constitutes the **Copula**, and “good” is the **Attribute**.

The **Subject** is the **person or thing about which something is affirmed or denied**, and may be described roughly as the nominative case.

V.G. : “All good men are wise.” The subject here is not “men,” nor “good men,” but “all good men,” because wisdom is attributed to all good men and not merely to a few.

The **Copula** is some **part of the present tense of the verb “to be.”**

V.G. : “John *is* good ;” “All men *are* mortal.”

Remark particularly that nothing else can be the Copula except “is” or “are.”

The **Attribute** is **whatever is affirmed or denied of the Subject**. In fact the Attribute is everything else in the sentence except the subject and the Copula. Point out the Subjects and Attributes in the following, giving a reason in each case :

EXAMPLES.

All wits are dreaded. All vices are reprehensible. Some acts of homicide are laudable. Some metals are tough. All the heavenly bodies were created. All true patriots are prepared to die for their country.

*See Additional Easy Examples at the end of this book.

N.B.—Hence, to treat a sentence in Logic, **you must be very careful at all times to reduce the principal verb in the sentence to an equivalent phrase having the present tense of the verb “to be,” and nothing else making the assertion or denial.**

V.G.: “Birds sing.” Before we can use this sentence in Logic we must change its form and break up the word “sing” into an equivalent form with “is” or “are” in it, and say—the sentence “Birds sing” is equivalent to “Birds **are creatures that sing.**” Thus we cause the Subject, Attribute, and Copula, to **stand out distinctly from each other**, so that there is no danger of confusing one with the other.

Again, “Fishes swim.” Here the sentence “Fishes swim” is equivalent to “Fishes **are creatures that swim.**” One cannot insist too strongly on this practice of breaking up and rearranging Propositions. Neglect of it will lead to endless blunders. Do many Examples in this.

EXAMPLES.

Farmers desire fine weather. Green crops require sunshine for their proper cultivation. Physicists revel in theories. He is the wisest philosopher who holds his theory with doubt. No horses have cloven feet. Planets do not shine by their own light. Some flowers have no smell.

*See Additional Easy Examples at the end of this book.

NOTE.

Frequently the Subject is the first word in the

sentence, but it is not necessarily so. However, **the Subject is invariably the nominative to the principal verb.** It can, therefore, always be determined by applying carefully the rule for finding the nominative in a sentence, viz., first find out the principal verb, and then place the word "who" or "what" before it. The answer to the question so formed is the nominative case.

EXERCISES.—Find the nominative in the following sentences:—"He jests at scars who never felt a wound." "All is not gold that glitters." "Great is Diana." "Life every man holds dear." "No one is free who is enslaved by his passions." "They never pardon who have done a wrong."

Of course there may be phrases in a sentence that qualify either the Subject or the Attribute, **but we treat the Subject with all its modifications as Subject, and the Attribute with all its modifications as Attribute.**

CHAPTER II.

KINDS OF PROPOSITIONS.

1. Propositions are either affirmative or negative. In nearly all cases it is quite easy to determine whether a Proposition affirms or denies. A few cases of difficulty may arise, and these will be treated of later on.

Propositions are—**Universal, Particular, Singular or Indefinite.**

A **Universal Proposition** is one in which the word “all” or some equivalent word (meaning “each and every individual”) appears before the Subject.

V.G. : “All men are mortal ;” “All birds sing ;” “Every European is white” ; “No Irishman is black.”

A **Particular Proposition** is one in which the word “some” or an equivalent word appears before the Subject.

V.G. : “Some Frenchmen are tall.”

EXAMPLES.

All metals are good conductors of electricity. All authors are jealous of reputation. Some rivers are very rapid. Some mountains are very dangerous. No European is black.

*See Additional Easy Examples at the end of this book.

An **Indefinite Proposition** is one in which such words as “all” or “some” or any equivalent word do not appear before the Subject, but it is one in which the Subject is left void of any sign.

V.G. : “Birds sing ;” “Fishes swim ;” “Americans are clever.” Here no words occur before “Birds,” “Fishes,” etc., and therefore the Propositions are called indefinite.

Before we can enter on the discussion of such a Proposition, we must first determine its precise

meaning in the mouth of our adversary. When he asserts that "Birds sing," does he mean to affirm that "**All** birds sing," or only that "**Some** birds sing." Until I am made quite sure of his meaning in this matter I cannot say whether I shall admit or deny his assertion. If he means to assert that "All birds sing," then I deny his assertion—for a duck does not sing. If he only means that "Some birds sing," then I admit the truth of the Proposition. Give some examples:—"Metals are element;" "Fixed stars are self-luminous."

EXAMPLES.

Clever men have large heads. Slaves are injured persons. Men are entitled to liberty. Virtuous men are not disposed to flatter. Americans are ready speakers.

*See Additional Easy Examples at the end of this book.

A **Singular Proposition** is one in which the Subject is a singular term meaning a single individual. *V.G.*: "James is strong."

NOTE.

A few difficulties may be mentioned here. If "all" means "all together" and not "individually," it ceases to be the sign of the Universal Proposition. If I say "All the Apostles are twelve," here "all" means all the Apostles together and not each individually. It would be absurd to say that the meaning of the Proposition is that "Each and every

one of the Apostles is twelve." Hence it is not a Universal Proposition even though it has the word "all" before the Subject.

Again, if I am told that "None but Irishmen are Leinstermen," this does not mean that "**All** Irishmen are Leinstermen," but only that any one who is not an Irishman is certainly not a Leinsterman; or in other words, the meaning is that **all** Leinstermen are Irishmen.

In general, in order to know the precise meaning of some difficult phrases, **much will depend on common sense and on a good knowledge of the very elements of parsing.**

Again, if a person tells me "Few were saved from the wreck," this seems to be an Affirmative Proposition, but, in reality, it is a negative one. The meaning is—"I saw the wreck. Few were saved from it. In fact, I don't know if **any** were saved; but, of this I am quite certain that, the **vast majority were lost, or were not saved.**" This, then, is what I want to assert, viz., that the vast majority were **not** saved, and this clearly is a Negative Proposition. The form I make use of to express this is:—"Few were saved;" hence this is a Negative Proposition.

CHAPTER III.

HOW IS THE ATTRIBUTE OF A PROPOSITION TAKEN ?

This is a **most important** point, and demands the **most careful study**. It is one of the great fundamental principles on which the whole fabric of Logic rests. And yet it is very simple.

When the word "all" or some equivalent word is placed before a noun, or must of necessity be understood before it, then this second word is said to be "taken universally."

Mark this phrase "**taken universally**," it is of frequent occurrence and must be thoroughly understood. We must be exceedingly familiar with it and capable of using it with great ease and freedom.

V.G. : "All men are mortal." Here the word "men" is said to be "**taken universally**," because it has the word "all" before it, and the sentence means to affirm that each and every individual included under the term "men" is mortal.

Again, if I say "No man is a horse," I mean to deny that any single individual included under the term "man" is a horse.

On the other hand, if the word "some," or any equivalent word, should be placed before a noun (or word or phrase equivalent to a noun) or must of necessity be understood before it, then this second word is said to be taken "**particularly**."

V.G. : "Some Europeans are white." Here the word European is said to be taken "particularly," or whiteness is not attributed to *all*, but only to *some*, Europeans.

As regards the **subject** of a Proposition, it is quite easy to determine whether it was taken "universally" or "particularly." Very frequently the **subject** has "all," or some equivalent word, expressed before it, and then clearly it is taken "universally."

At other times it has "some" preceding it, and then it is clearly taken "particularly."

EXAMPLES.

In what way is the *subject* taken (*i.e.*, whether "universally" or "particularly") in the following example? Give a reason for your answer.

All metals are good conductors of heat. All great painters are poetical. All Hindoos are black. Some books are dull. Some acts of homicide are legal. Some slaves are happy. No Englishman thinks poorly of his country.

*See Additional Easy Examples at the end of this book.

When neither the one nor the other of these words is expressed before the Subject, then you must ask the person with whom you are discussing the question **which word does he mean to be understood before the Subject; whether the word "all" or the word "some,"** and so, in all cases, it is quite easy to make out how the **Subject** is taken (whether "universally" or "particularly").

V.G. : If a person says "Birds sing," then we

must inquire of him whether he means to assert that "**all** birds" sing, or only "**some** birds." Till this point is fully cleared up I cannot say whether I admit or deny the Proposition.

But it is not so **easy to know whether the Attribute is taken "universally" or "particularly."** There you have not the word "**all**" or "**some**" expressed before the Attribute.

V.G. : In the Proposition, "All men are mortal," how is the word "**mortal**" to be taken? Does it mean: "All men are all the **mortal things** in **this world**," or does it merely mean that "All men are some of the **mortal things in the world**"? This is the great point to decide; let us proceed in order.

-First, then, **how is the Attribute taken in a Universal Affirmative Proposition**, such as "All men are mortal"? Does this mean that "All men are all the **mortal things in this world**," or rather "All men are some of the **mortal things in the world**"? Clearly, in saying that "All men are mortal," no person would wish to assert that "All men are all the **mortal things in the world**"; for evidently there are many other things in the world that are "mortal" as well as men. A duck is mortal; a goose is mortal, etc. The meaning of the Proposition, therefore, is: "All men are some of the **mortal things in the world**." By an extended

study of this sort we see that the **Attribute of a Universal Affirmative Proposition** has always the word "some" understood before it, and so is always taken "particularly."

Again, if we examine in the same way a **Particular Affirmative Proposition**, such as "Some Frenchmen are tall," we find that the Attribute "*tall*" has always the word "*some*" understood before it, and not the word "*all*"; and so it also is taken "particularly"; for when I say "Some Frenchmen are tall," evidently I do not mean to say that "They are all the tall people in the world"; for some Germans are tall, and some Englishmen are tall, etc. All I can be taken to mean in fairness is that "Some Frenchmen are some of the tall beings in the world." Thus we arrive at the conclusion that the Attribute of a Particular Affirmative Proposition is always "taken particularly."

In general we, therefore, arrive at the **Great Rule never to be forgotten** that the Attribute of an Affirmative Proposition, whether universal or particular, is always taken "particularly," or has the word "some" understood before it.

(Do many, very many, examples under this heading. Draw them out at full length, and **be sure to insert, before the Attribute in each case, the word "some."** Unless this is done constantly, and with scrupulous exactness, there is no end to all the blunders that will be committed.)

EXAMPLES.

All birds are feathered. All fixed stars are self-luminous. All Frenchmen are polite. All dogs bark. All Plants receive their light from the Sun. Some animals are bipeds. Some books are amusing. Some Historians can be trusted. Some Novels are degrading.

* See Additional Easy Examples at the end of this book.

NOTE.

On Euler's Circles.—What has been said in the former paragraphs is sometimes further explained and illustrated by the use of Circles to enclose all the individuals included in each class we speak of. For example If I am speaking of "all men," then I say that each and every individual man in the world is existing within the circle (Fig. 1), just as sheep in a sheepfold, and that no man can be found anywhere outside that circle.



Fig. 1.

Again, if I am speaking of "all mortals," then, of course, this phrase includes all men, horses,

cows, sheep, etc., and so should be represented by a much larger circle (Fig. 2) in which all these men and animals are included.

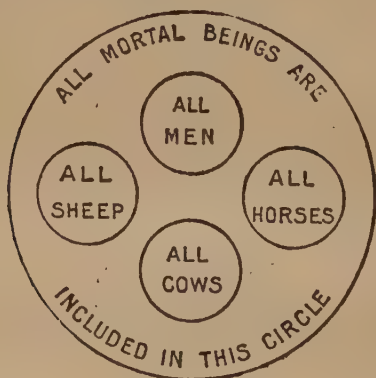


Fig. 2.

With this understanding we can easily represent by diagrams to the eye what *precisely* is asserted in each Proposition (and so make the matter clearer to the senses). If I say "All men are mortal," I mean that if you get all the mortal things in the world, as horses, cows, sheep, dogs, etc., and put them all together into one great circle, in that great circle you would find **all** men included, and no man could be found anywhere outside it. This is represented in a diagram by drawing **a large circle** that will represent **all living beings**, and placing inside it **a small circle** representing **all men** thus:—



Fig. 3.

Again, if I wish to represent by a diagram that "No man is a horse," then I draw a circle including all men, and likewise a circle including all horses, and I place one completely outside the other. This represents that if I got all the men in the world and placed them in a circle, and likewise if I got all the horses together and placed them in a circle, I should then see that **no single man was to be found amongst the horses, nor any horse amongst the men.** Thus:—



Fig. 4.

Lastly, if I want to represent by a diagram that "Some Irishmen are clever," then I draw one circle including "all Irishmen," and another including "all the clever beings in the world," and I cause one circle partially to overlap the other, thus :—



Fig. 5.

This represents that if I got all the clever beings together in one circle and also all Irishmen together into another circle I should find that portions of the circles would overlap, and that some Irishmen were included in the circle of learned beings, and *vice versa* that some learned beings were amongst the Irishmen.

CHAPTER IV.

HOW IS THE ATTRIBUTE OF A NEGATIVE PROPOSITION TAKEN ?

By reasoning quite similar to the above, we can easily show that the **Attribute** of a **Negative Proposition** is always taken "universally."

(1) For instance, if we take a **Universal Negative Proposition**, such as "No Englishman is black," how is the word "black" taken? Is the word *all* understood before it, or is the word *some*? Evidently it does not mean that if you got all the Englishmen in the world together, and if you likewise got all the blacks, you would not find **any single** Englishman amongst some of the blacks, but it means that you would not find a single Englishman amongst ALL the blacks. So you see the word *all* is understood before the word "blacks;" therefore the word "blacks" is taken "universally." In other words, when you say, "No Englishman is black," that is equivalent to saying that if you got all the blacks in the world together you would not find a single Englishman amongst them. Or in other words you remove or deny *all* the blacks of the world from Englishmen.

Thus we see that the **Attribute of a Universal Negative Proposition** is always taken "universally." "No Englishman is **any single black** in the world."

This, as we have just seen, is very simply represented by circles, as in Fig. 4.

Here you would have all the Englishmen in one circle, and all the blacks in the other, and you would not find that there was a single Englishman amongst *all* the blacks.

(2) Lastly, if we study a **Particular Negative** such as "Some Irishmen are not learned," here again we find that the **Attribute** "learned" is taken "**universally**," for the meaning clearly is—that if you got all the learned beings in the world together you should find that outside these, away from all these, was a certain band of Irishmen represented by "Some Irishmen." This, then, is the second **Great General Rule**, viz., "That the Attribute of a Negative Proposition is **always taken** "universally," or has the word "all" understood before it.

N.B.—Do many, very many, examples as directed in page 14, taking **care** in **each case** to draw out each proposition at full length and to insert before the **Attribute** "Not any single (being, etc.) *in the world*."

EXAMPLES.

No Englishman is black. No horse is a man. No sparrow is a thrush. No European holds this theory. Some Frenchmen are not clever. Some metals do not melt at high temperatures.

* See Additional Easy Examples at the end of this book.

NOTE.

When the above is well known and thoroughly practised, and when the rest of this little book is gone through, the following may be read. However, it is best not to read it till then lest it may put more important matter out of your head and cause confusion.

Remark, that sometimes we meet with such a Proposition as the following : " All equilateral triangles are *equiangular* triangles." Here from seeing the Proposition on paper all we could know is that "**all** equilateral triangles are **some** of the equiangular triangles in the world." We would never find out **from the bare statement** that **all** equilateral triangles are really all the equiangular triangles in the world. This, however, we can prove to be true by Euclid, and it so happens that " all equilateral triangles are **all** the equiangular triangles in the world." Thus it happens that the Attribute of an Affirmative Proposition is **sometimes** really taken " universally," or has the word *all* understood before it. This knowledge, however, is **never under any circumstances conveyed** by the **mere fact of the assertion** or *vi formae*, as it is called. Such information must always be derived from some other Science, as from Euclid, Chemistry, etc. The Attribute in such cases is said to be taken " universally " *vi materiae*. Study Examples of Propositions in Appendix.

CHAPTER V.

CONVERSION OF PROPOSITIONS.

The two following chapters on **Conversion** and **Opposition** of Propositions are not of great importance, and may without inconvenience be omitted.

By the **Conversion of Propositions** we mean the

process of deducing legitimately one Proposition from another, making the Attribute of the first the Subject of the second Proposition, and the Subject of the first the Attribute of the second, deriving from "All men are mortal," the other Proposition, "Some mortals are men."

To do this legitimately two points must be attended to.

GENERAL PRINCIPLES.

First Principle.—If the Proposition to be converted is affirmative, the Converse* must be affirmative. If the Proposition to be converted is negative the Converse must be negative.

This, of course, is self-evident, for if the first Proposition is affirmative then the Subject agrees with the Attribute, and it can never disagree with it, as would be the case if you deduced from it a Negative Proposition. For instance, if it is true that "All men are mortal," or that mortality can be affirmed of all men, it cannot follow by any legitimate process that mortality can be denied of "all" or even of "some" men. Thus we cannot deduce a Negative Proposition from an Affirmative one. Neither can we deduce an Affirmative Proposition from a Negative for a similar reason.

* The Proposition to be converted is called the Convertend, and the one that results from the conversion is called the Converse.

Second Principle.

The second point to be attended to in the conversion of Propositions, is to see that no term is taken in a wider sense in the Converse than that in which it was already taken in the Convertend. That is to say, that if a term were taken "Particularly" in the Convertend, it cannot be taken "Universally" in the Converse. This stands to reason, for we ought to compare the same two things in the Convertend and the Converse, and not to compare one set of things in one Proposition and quite a different set in another. For example, if I say, "All Englishmen are white," I cannot convert the Proposition into "All white beings are English," for in the first Proposition I spoke only of *some* white beings whereas in the second Proposition I affirmed something of **all white** beings. This is not just.

(NOTE.—Though no term can be taken in a **wider** sense in the Converse than in the Convertend, still it may be lawfully taken in a **less wide** sense.)

From these two principles Special Rules follow.

RULE 1.—A Universal Affirmative must be converted into a Particular Affirmative.

This is clear, for if we wish to convert the Proposition "All men are mortal," this is equivalent to "All men are **some** of the mortal things in the world." Therefore, evidently, "**Some** of the mortal things in the world are men." It would not be true to say "**All** mortal beings are men." This may

appear clearer from the circles. If all men are contained in a small circle, and if this small circle is completely enclosed by the large circle which represents "all mortals," then, of necessity, it follows that some of the things included in the large circle of *mortals* are *men*. (See Fig. 3.)

Here the Convertend is affirmative, so is the Converse, and no term is taken in a wider sense in the Converse than that which it had in the Convertend. The Subject was universal in the Convertend and could not possibly be taken in a wider sense, while the word *mortal* was taken particularly in the Convertend, being the Attribute of an Affirmative Proposition, and is taken in the same way in the Converse.

Work many examples. Whenever you are converting a Proposition, **it is most important to place before the Attribute the word "all" or "some,"** according as the **word is taken "universally" or "particularly,"** and then transpose the terms.

V.G. : Convertend—"All Irishmen are white."

Proposition prepared for conversion—"All Irishmen are **some** of the white beings in the world."

Converse—"Some of the white beings in the world are Irishmen."

EXAMPLES.

All wise men are good. All Germans are hard students. All birds sing. All gases are elastic. All Chinamen are coloured. All farmers desire fine weather.

RULE 2.—A Particular Affirmative Proposition must be converted into a Particular Affirmative.

V.G. : “Some Irishmen are learned.”

Prepared for conversion—“Some Irishmen are some of the learned beings in the world.”

Converse—“Some of the learned beings are Irishmen.”

EXAMPLES.

Some flowers are red. Some books elevate our thoughts. Some Frenchmen speak English well. Some very high mountains are dangerous of ascent. Some gases are inodorous.

The reason of this rule is, that when you follow it you preserve the affirmation, and no term is taken in a wider sense in the Converse than in the Convertend.

This might also be shown by circles.

RULE 3.—By similar reasoning we can easily show that a **Universal Negative may be converted into a Universal Negative**, for then the negation is preserved and no term is taken in a wider sense in the Converse *than* in the Convertend. This last is clear, for in the first Proposition both the terms are Universal, and in the second they are the same, viz. : “No man is a horse,” therefore “No horse is a man.”

If you represent this by circles then you get all the men in the world in one circle (see Fig. 5) and all the horses into another, and you find that no single man is found amongst all the horses. This is

represented in a diagram by placing one circle completely outside the other as in Fig. 5. Consequently it is clear that if they are thus separated so that no man could be found amongst the horses, it must follow that no horses could be found amongst the men.

EXAMPLES.

No European is black. No sparrow is a thrush. No slave can be happy. No elector can misuse his vote. No enlightened astronomer holds this theory.

*See Additional Easy Examples at the end of this book.

RULE 4.—A **Particular Negative cannot be converted** into a Universal Negative nor into a Particular Negative, for in either case the subject of the first Proposition would be taken in a wider sense in the second Proposition, than that which it had in the first.

V.G. : “Some triangles are not equiangular.” I cannot say “Some equiangular triangles are not triangles,” nor yet “No equiangular triangle is a triangle,” for in each of the converted Propositions the word triangle is *universal*, being the attribute of a Negative Proposition, whereas in the Convertend the same word was taken “particularly” as being the subject of a Particular Proposition.

NOTE.

A Proposition is said to be converted “simply” or “simpliciter” when the Subject and the Attribute are both taken “universally” in the Convertend and in

the Converse, or even when both are taken “particularly” in the Convertend and in the Converse, *v.g.*, “No man is a horse;” “No horse is a man.” Here each term is taken *universally* both in the Convertend and the Converse, and so it is called “Simple Conversion.” Again, “Some men are strong;” the Converse is “Some strong creatures are men.” This is also called Simple Conversion.

If, however, the Converse is a Particular Proposition, although the Convertend was a Universal Proposition, then this is said to be conversion *per accidens*, *v.g.*: “All men are mortal;” the Converse is “Some mortal beings are men.”

CHAPTER VI.

OPPOSITION OF PROPOSITIONS.

Two Propositions are said to be Opposed when having the same Subject and Attribute one is affirmative and the other negative, or one is universal, the other particular, *v.g.*, these Propositions are opposed—

“All men are honest” and “No man is honest.”

“All men are honest” and “Some man is not honest.”

Or, finally, “All men are honest” and “Some men are honest.”

From these examples it is clear that one Proposition may say *just what is required* to deny the truth

of another, or it may go much farther and affirm the very opposite.

When one **Proposition** asserts what is precisely required to deny the truth of another **Proposition** it is then said to be the "**Contradictory**" of that other **Proposition**.

V.G. : "All men are earnest." The contradictory is "Some one man is not earnest," for it asserts what is absolutely required to deny the truth of the first **Proposition** and nothing more.

Again, if I say, "Some Englishmen are poor," to refute this I must prove that "No Englishman is poor." Nothing less is sufficient.

One **Proposition** is said to be the "*Opposite*" of another if it asserts MORE than is necessary to contradict the first and even asserts the very opposite.

V.G. : "All men are honest." The opposite of this is "No man is honest." In this last **Proposition** much more is asserted than is necessary to refute the first.

RULES FOR OPPOSITION.

The **Contradictory** of a **Universal Affirmative** is a **Particular Negative**.

V.G. : "All men are honest." The **Contradictory** is "Some man is not honest."

The **Contradictory** of a **Particular Affirmative** is a **Universal Negative**.

V.G. : "Some Irishmen are rich." The Contradictory is "No Irishman is rich."

And *vice versa*, the Contradictory of a Universal Negative is a Particular Affirmative, and the Contradictory of a Particular Negative is a Universal Affirmative.

If a Proposition is *true* its *Contradictory* **must** be *false*.

If a Proposition is *false* its *Contradictory* **must** be *true*.

If a Proposition is *true* its *Opposite* **must** be *false*.

If a Proposition is *false* its *Opposite* **need** not be *true*. **Both may be false.**

N.B.—In refuting any adversary be sure to undertake to prove only the Contradictory of his assertion. It is often a great mistake to assert the Opposite, as it requires you to prove much more.

EXAMPLES.

Can the following propositions be both *true* at the same time?

Can they be both *false*?

If one of the propositions is *true*, what is of necessity *false*?

If one of these propositions is *false*, what must be *true*?

Give a reason for your answer in each case.

All metals are conductors. No metals are conductors.
Some metals are conductors. Some metals are not conductors.

All men are fallible. Some men are fallible. No man is fallible. Some men are not fallible.

Some dogs are ferocious animals. No dog is ferocious. Some dogs are not ferocious.

SECTION II.

SYLLOGISMS.

CHAPTER I.

A Syllogism is an argument consisting of three Propositions, which are of such a nature that if you admit the first and second you must admit the third or the Conclusion.

V.G. : All men are mortal ;
 John is a man ;
 ∴ John is mortal.

This argument consists of three Propositions, *viz.* :
 (1) All men are mortal ; (2) John is a man ; (3)
 John is mortal. And these Propositions are of such a nature that if you admit the first and second you **must admit the third** or the Conclusion. For if you admit that "All men are mortal," and if you further admit that "John is a man," you cannot in fairness deny that "John is mortal."

Give many such examples, *v.g.* : "All Europeans are white ; John is a European ; Therefore John is white."

Here you may deny that "All Europeans are white ;" you may say "Some of them are dark ;" or you may deny that John is a European ; you may say he is an American. **But if you admit that "All Europeans are white,"** and further

that "John is a European," then you must admit
 ' John is white."

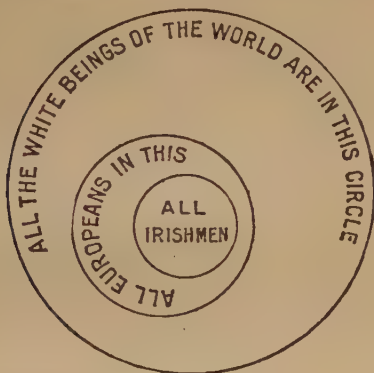


Fig 6.

EXAMPLES.

All wise men are good : Plato was a wise man ; Therefore Plato was good.

All wits are dreaded. John is a wit. Therefore he is dreaded.

All tyrants are deserving of death. Cæsar was a tyrant. Therefore he was deserving of death.

*See Additional Easy Examples at the end of this book.

Remark that every argument in which you have three Propositions is not a Syllogism. No. The Propositions must be of such a nature that if you admit the first and second you must admit the third.

For example, the following argument, although consisting of three Propositions, is not a Syllogism, *v.g.* : All Englishmen are white ; All Irishmen are strong ; Therefore all Irishmen are Englishmen. **Because, although you admit the first and second Propositions, you need not admit the third.**

The **Proposition** you wish to prove in the Syllogism, and **which comes after the word "therefore,"** or some similar word, is called the **Conclusion**.

The **other two Propositions** are called the **Premises**, or the Propositions that **go before** and enable you to draw the Conclusion.

One of the Premises is called the *Major Premise*, and the other the *Minor Premise*.

The **Major Premise** is that which contains the *Attribute* of the Conclusion (or, as it is called, the *Major Term*).

The **Minor Proposition** is that which contains the *Subject* of the Conclusion (or, as it is called, the *Minor Term*), *v.g.* : All men are mortal ; John is a man ; Therefore John is mortal. Here the *Attribute* of the Conclusion is " mortal," and this word is found in the first Proposition, therefore the first Proposition is the Major.

Again " John " is the subject of the Conclusion, and it appears in the second Proposition, therefore it is the Minor Proposition.

Do many examples in a similar way, **always**

taking care to look to the Conclusion first, and find out its attribute, and then see in what Proposition it is found.

The Middle Term is that Term which appears twice in the Premises. This is the great test for the Middle Term, apply it most carefully, and constantly, thus :—

V.G.: All men are mortal; John is a man, etc. Here “All men” appears in the first Proposition, and “man” in the second. Therefore, “man” is the Middle Term.

Do many examples, finding out the Middle Term always in this way.

EXAMPLES.

All Europeans are white; John is a European; Therefore he is white.

All wits are dreaded; All wits are admired; Therefore some who are admired are dreaded.

All birds are feathered; The sparrow is a bird; It is feathered.

All Planets receive their light from the Sun; Jupiter is a Planet; Therefore it receives its light from the Sun.

N.B.—Note PARTICULARLY that the **validity** of an argument does not in any way depend on the TRUTH of the Propositions of which it is composed, but altogether on the fact whether if you admit the First and Second Propositions you must admit the Third.

The First Proposition may be false, the Second

may be **false**, and even the Conclusion itself may be **false**, and still the argument may be **thoroughly valid** and good. In fact it will be a **good** argument if **supposing that you did admit** the First Proposition, though ever so false, and supposing also that you did admit the Second, you **should admit** the **Third**. This is the **great test** of a **Syllogism**.

Logic does not concern itself in **any way** about the **truth** of the Propositions, but only about the **cogency** of the argument.

It is not necessary even to **understand** the Terms of which a Syllogism is made up in order to know whether it is a good argument or a bad one. You have only to confine your attention to the precise words that were used, and see if "there were three terms and only three," "if the Middle Term were taken generally at least once," etc.

For instance, if I get this argument; "All animals with horns on the head are ruminant." "The Elk has horns on its head." Therefore "The Elk is ruminant."

I see at once that this is a good argument; for if I admit that "All animals with horns on the head are ruminant," and if I further admit that the "Elk has horns on the head," then I must admit that "the Elk is ruminant."

I may not know what is the meaning of "ruminant." I may not know whether there is such an animal as an Elk, but **I do know** that if I admit

that "All animals with horns on the head are ruminant," and **if I further admit** that the Elk has horns on the head, **then I must admit** that "the Elk is ruminant." The proposer of the Syllogism seems merely to say: "This is the form of my proof. What do you think of it? **Supposing that I proved** the First Proposition and also the Second, would you **then** admit my 'Conclusion.' " (On this point see Whately in his *Logic* and *Easy Lessons on Reasoning*. He is excellent. See *Logic*, pp. 18-26, also p. 53, 9th Ed. 8vo; and *Easy Lessons on Reasoning*, pp. 22-26.)

CHAPTER II.

THE TEST FOR A GOOD SYLLOGISM.

The **great Test** by which we may know if a Syllogism is good or bad is this :—

"Is it such that if I admit the first and second Propositions, I must of absolute necessity admit the third or the Conclusion? If so, it is a good Syllogism. If not, then the Syllogism is bad. This is a most simple and clear rule, and easy of application in most cases. **It should always be employed. It really dispenses with all other rules** for Syllogisms—if only a person has sufficient common sense to apply it. I cannot be too strong in insisting on its constant application.

Be sure to get this in well. It is the **great universal test** of a good Syllogism, and ought to be employed on all occasions, at least as a preliminary. Persons often forget to stand back from their argument, and view it steadily in that clear, full light. This is a great pity. Many difficulties would be solved at once if one only adopted this rule. Cultivate carefully this habit, and ask yourself seriously and earnestly: "If I admit the first Proposition and also the second Proposition, **must I of necessity admit the third?**" For practice in this read the Syllogisms given in the last chapter.

Still, as it may be somewhat difficult to apply this rule on some occasions, therefore certain **MERELY MECHANICAL** rules are laid down, by the application of which you can find out at once whether a Syllogism is a good one or a bad one. These rules act like a series of sieves, through which the argument has to pass. If it passes through each of these, then it is a good argument. If, however, it offends against any, then it is kept back and not allowed to pass, and so is rejected as bad.

The next chapter may without inconvenience be omitted.

CHAPTER III.

THE GENERAL PRINCIPLES ON WHICH SYLLOGISTIC REASONING DEPENDS.

The great fundamental principle on which all Syllogistic Reasoning depends for its truth may be described with sufficient accuracy as follows :—

1. If two things agree with a third, they agree with one another.

2. If one thing **agrees** with a third, and a second thing **does not agree** with that same third, these two things disagree one with the other.

3. If two things **disagree** with a **third**, they **may agree** or **disagree** one with the other. No conclusion can be drawn.

For example, if $A = B$ and also $C = B$, then $A = C$.

But if $A \neq B$ and $C \text{ is NOT } = B$, then $A \text{ is not } = C$.

Lastly, if $A \text{ is NOT } = B$ and if $C \text{ is NOT } = B$ then $A \text{ may be } = C$ or may not. No Conclusion follows.

Here we see that all Syllogistic Reasoning consists in comparing two things with a third and from their agreement or disagreement with this third we infer their agreement or disagreement with one another. All depends, therefore, on finding out this third thing by means of which you can COMPARE them. This third thing is called the Middle Term,

or the Term with which the other two are compared.

Another way for stating the general principle on which all Syllogistic reasoning depends is this :—
 “Whatever can be affirmed or denied of a whole class, may be affirmed or denied of any individual in that class.”

V.G. : If every individual of this class of “men” is mortal, that is, if ALL men are mortal, it follows of necessity that an individual in that class—viz., John—is mortal.

CHAPTER IV.

RULES FOR SYLLOGISMS.

From this general principle flow all the Rules of Syllogisms.

For example, the First Rule says : “**You must have in a Syllogism three and only three Terms—three and only three Propositions.**”

The reason of this is evident, for you are going to infer the agreement or disagreement of two things from their agreement or disagreement with a third. Therefore, you require a **third** Term with which to compare them, and you **do not require a fourth**, for, if you used it, you would compare two things, not with a third, but with two different things, and so you could not conclude that they agree or disagree with each other.

V.G. : All men are mortal ;
John is a man ;
∴ John is mortal.

Here count the Terms. "All men" is one Term, "mortal" is another, and in the Proposition "John is a man," "John" is a third Term. The Term "man" was used before. In the third Proposition you have "John is mortal," and each of these Terms appeared before.

Thus we see that we have three Terms and only three. We have also three Propositions and only three.

In two of them we affirm or deny two Terms of a third, and from their agreement or disagreement with this third we infer their agreement or disagreement with one another, so that these three Propositions are **necessary** for these operations, and any more would be useless.

N.B.—Remark that the Terms must be three, not only with regard to the letters and the words, but even with regard to the meaning.

V.G. : If I say--

Mouse is Monosyllable ;
A Mouse eats cheese ;
∴ A Monosyllable eats cheese.

Here we have apparently only three Terms, viz., "Mouse," "Monosyllable," and "a creature that eats cheese ;" but in reality we have four Terms, for the word "Mouse" means two different things. In

one case it means an “**animal**” in the other case it means a “**word**.” It is not true to say that the animal “**Mouse**” is a monosyllable, nor that the word “mouse” “eats cheese.”

SECOND RULE OF SYLLOGISMS.

No Term is to be taken in a wider sense in the Conclusion than that in which it was taken in the Premises.

The meaning of this is that if a Term is taken “particularly” in the Premises it cannot be taken “universally” in the Conclusion. It may, however, be taken “particularly” in the Conclusion even though it were taken “universally” in the Premises.

The reason of this rule is—that since you compare two things in the Premises with a third, you ought to conclude about these two things, and not about other things, as would be the case if after having spoken of “some men” in the Premises, you drew a Conclusion about “all men.”

For instance I say—

All Africans are black;

All Africans are men;

∴ All men are blacks.

To apply Rule 2 to this Syllogism we look to the **Conclusion**, viz. :—“All men are blacks”—and we see how is the word “men” taken there. Evidently it is taken “universally,” for it is the subject of a Universal Proposition, and has the word “all”

before it. Now, how is this word "men" taken in the **Premises**? It occurs in the Second Proposition, viz., "All Africans are men," and is the attribute of an Affirmative Proposition; therefore it is taken "particularly," and so it is taken in a wider sense in the conclusion than in the Premises, and thus the second rule is broken, and the argument is a bad argument.

In this case the Conclusion does not follow from the Premises, neither is the Conclusion **true**. However, the Conclusion might have been "All blacks are men," and then the Conclusion would be **true**, but the **argument** would be **invalid**, for even if you admitted the First and Second Propositions you need not admit the Conclusion. All you would be bound to admit from the Premises is that "**some** blacks are men." Here "blacks" would be taken in a wider sense in the Conclusion than in the Premises. In the Conclusion it is taken "Universally" as the subject of a Universal Proposition. In the Premises it is taken "particularly" as the Attribute of an Affirmative Proposition, viz., "All Africans are black."

N.B.—In applying **any** of the rules of Syllogisms be **quite sure** to split up each Proposition **accurately** into its true **Subject, Attribute** and Copula, as explained in Chapter I., page 4, else many mistakes may occur.

Do many examples.

EXAMPLES.

Some birds lay eggs; Some animals do not lay eggs;
Therefore some animals are not birds.

No German is a Hindoo; All Hindoos are black; Therefore
no blacks are Germans.

Some animals are bipeds; Some beasts are not bipeds;
Therefore some animals are not beasts.

* See Additional Easy Examples at the end of this book.

THIRD RULE OF SYLLOGISMS.

The Middle Term must be taken "universally" at least once.

This is the all-important rule and that which is most frequently violated.

Let us try to understand this rule thoroughly and apply it constantly and with scrupulous exactness.

The meaning is clear. The Middle Term must be taken "Universally," either in the first Proposition or in the second. Therefore, to satisfy this condition the Middle Term must either be the SUBJECT of a Universal Proposition or the subject or the attribute of a Negative Proposition. These are the only terms in any Propositions that are taken "universally."

The reason of this rule is that in a Syllogism from its NATURE something or other must be affirmed or denied of a whole class, and even of every individual in this class, and then a certain individual or certain individuals must be said to belong to that class or not to belong to it, and from this you conclude that the two things you wish to compare either agree or disagree.

V.G. : If I say—

All men are mortal ;

John is a man ;

∴ John is mortal.

Here, I say, that ALL men are included in the class of mortals, and, therefore, with reason, I conclude that a single individual man, "**John**," whom I know, is also to be found included in that class of "mortals."

This might be illustrated and made more clear by Euler's Circles. When I say "All men are mortal " I mean that if I got all the mortal beings in the world into one by circle or class I should find all men included in that class, and not a single man could be found anywhere outside of it. Thus, in the large circle, I have "all mortals" inside that I have included "All men." And, therefore, since I can attribute mortality to "ALL men" I can certainly attribute it to **every individual** in the circle containing the men. See Fig 3, p. 17.

APPLICATION OF THE RULE.

(1) **Now to apply this rule. First find out carefully which is the Middle Term.** This is done by seeing which Term occurs **twice** in the Premises.

(Do many examples of this sort—confining your attention to finding out which is the Middle Term and nothing else. Get very familiar with this practice.)

(2) **When you are strong in this then see how is the Middle Term taken in the first Proposition.** If it is the Attribute of an Affirmative Proposition it is "particular;" if it is the attribute of a Negative it is "universal." Of course if the Middle Term is the SUBJECT of a Proposition you see at once whether it is taken "particularly" or "universally" from the sign before it. *V.g.*: "Some," "all," "none," etc.

(3) **When this is done try in the same way how the Middle Term is taken in the second Proposition.**

V.G.: All men are mortal;
 John is a man;
 ∴ John is mortal.

Here "man" occurs twice in the Premises—it is, therefore, the Middle Term. In the first Proposition you have "All men," in the second John is "a man."

Now how is "men" taken in the first Proposition? Evidently "universally" because it is the subject of a Universal Affirmative. **One cannot be too careful in applying this rule precisely in this way. It is the one-half of Logic.**

Again take the example—

All Englishmen are Europeans;
 All Irishmen are Europeans;
 ∴ All Irishmen are Englishmen.

Here "Europeans" is the Middle Term **because it occurs twice in the Premises.** In the first Premise

it is taken "particularly" for it is the attribute of an Affirmative Proposition. In the second Premise it is also taken "particularly" for the same reason. Therefore the Syllogism is invalid, for the Middle Term is not taken "universally" even once.

Do many examples.

EXAMPLES.

All Europeans are white; John is white; Therefore he is a European.

All tyrants deserve death; Louis was not a tyrant; Therefore he does not deserve death.

He who performs his duty is a good man; Henry performs his duty; Therefore he is a good man.

The innocent are not to be punished. John is not to be punished; Therefore he is innocent.

*See Additional Easy Examples at the end of this book.

The remaining rules of Syllogisms are not important.

UNIMPORTANT RULES FOR SYLLOGISMS.

The FOURTH RULE says—"Two Negative Propositions prove nothing." This of course is clear, for if two things disagree with a third they may or may not agree with one another, *v.g.*: If the book (A) is NOT equal to the book (B), and further if the book C is NOT equal to the book (B) you can draw no Conclusion. A may be equal to C or it may be unequal to it.

FIFTH RULE.—"If one Premise is Negative the Conclusion must be Negative." This is evident for

if one Premise is Negative the other must be Affirmative, and so one of the Terms agrees with the Middle Term and the other disagrees with it. Therefore they disagree with one another and one must be denied of the other in the conclusion.

SIXTH RULE.—“Two particular Propositions prove nothing.” For the two Propositions must be both affirmative, or both negative, or one negative and the other affirmative.

(1) If both Propositions were particular and affirmative then no Term would be taken “universally,” for the attribute of an Affirmative Proposition is always taken “particularly,” and the **subjects** are also taken “particularly” as being the subjects of Particular Propositions. Thus the Middle Term would not be taken “universally” even once, and Rule 3 would be violated.

(2) If both were Negatives there could be no Conclusion for by Rule 4 two Negatives give nothing.

(3) If one Premise is Negative and the other Affirmative then the Conclusion should be Negative by Rule 5. But if this were so either Rule 3 or Rule 2 would be broken, that is to say either the Middle Term would not be taken “generally” or else some Term would be taken “universally” in the Conclusion that was taken “particularly” in the Premise. This is clear for the Conclusion being Negative by Rule 5, therefore its Attribute must be

taken “universally.” But there is only one universal Term in the Premise—if that Term appears in the Conclusion then the Middle Term was not taken “universally.” If the Middle Term was taken “universally ” then the Attribute of the Conclusion was “particular” in the Premises and it is taken “universally” in the Conclusion and so Rule 2 is violated.

METHOD OF APPLYING THE IMPORTANT RULES OF SYLLOGISM. X

NOTE.—Now let us see how we should APPLY these **important** Rules of Syllogisms in order to find out whether an argument is a good argument or a bad one. To do this proceed **most carefully** in the following manner :—

Suppose this is the Syllogism, “All men are mortal ; John is a man ; Therefore John is mortal.”

To this apply the rules of Syllogisms IN ORDER, thus :—

1. See if it offends against the first Rule of Syllogisms. This Rule says that in a Syllogism you should have three and only three Terms—three and only three Propositions. Is that the case here? Are there three and only three Terms? Try. Count the Terms? “All men” is one Term. “mortal” is another, and “John ” is a third. There is no fourth. Therefore this Syllogism L

contains three and only three Terms. Also clearly it contains three and only three Propositions. Thus it does not offend against the First Rule of Syllogisms.

2. Now, apply the Second Rule in precisely the same way. It says, "No Term is to be taken in a wider sense in the Conclusion than in the Premises." Is that the case here? Try. The Conclusion is "John is mortal." In this the word "mortal" is taken "particularly," for it is the Attribute of an Affirmative Proposition, and it is also taken "particularly" in the Premises for the same reason. "John" is the other Term in the Conclusion, and clearly it is not taken in a wider sense in the Conclusion than in the Premises. Thus we see this Syllogism does not offend against the second Rule either.

3. Now proceed to test this Syllogism by means of the Third Rule of Syllogisms. This Rule says, "The Middle Term must be taken 'universally,' at least once." Is this Rule preserved here? Try.

(a) What is the Middle Term? Evidently it is "man," for this Term occurs twice in the Premises.

(b) Now, how is this Term "man" taken in the First Proposition? "Universally," for it is the **subject** of a Universal Proposition. Therefore this Syllogism does not offend against the Third Rule for the Middle Term is taken generally at least once.

(c) How is the Term "man" taken in the Second Proposition? "Particularly," for it is the Attribute of an Affirmative Proposition.

The Fourth, Fifth, and Sixth Rules of Syllogisms should, if necessary, be applied in a similar way, but generally speaking they are unimportant, and need not be applied.

Many other examples should be studied in a similar way. (See Examples of Syllogisms in preceding Sections and at the end of this book.)

CHAPTER V.

HYPOTHETICAL PROPOSITIONS AND HYPOTHETICAL SYLLOGISMS.

Some Propositions do not *absolutely* affirm or deny the subject of the predicate, but do so only *conditionally* or in case something else is true, *v.g.* : "The ground is wet if it has rained." This Proposition does not assert that "the ground is wet" nor yet that "it has rained," but it affirms that *granted* that "it has rained" then it follows of NECESSITY "that the ground is wet"

Such Propositions are called Hypothetical, and are usually recognised by the presence of the word "if" or some similar word or phrase connecting two Propositions.

The truth of such a Proposition depends on the fact that there is such a connection between the first and second Propositions joined by the word "it," that granting one, the other *necessarily* follows and cannot be denied. If no such connection exists

between the first and second Propositions then that Hypothetical Proposition is not true. *V.g.*: If I say "I shall die if I look at that thing."

A Hypothetical Proposition consists of two Propositions connected by the word "if"—these Propositions being of such a nature that should you admit the truth of the Proposition after "if" you must admit the truth of the Proposition before "if."

The Proposition that has "if" before it is called the *Antecedent* and is that from which the other Proposition follows. The Proposition before "if" is the *Consequent*, *v.g.*: The ground is wet **if** it has rained. Here "the ground is wet" is the **Consequent**, and "it has rained" is the **Antecedent**.

Every Hypothetical Proposition may be regarded as a Universal Affirmative Proposition, and may be readily converted into such, *v.g.*: "John is white if he is a **European**" = "All **Europeans** are white."

Again, "This triangle is equiangular if all its sides are equal" = "All equilateral triangles are equiangular."

The transformation is made in these cases by putting the word "all" before the Proposition after "if," and making the other evident appropriate changes as seen in the above examples.

HYPOTHETICAL SYLLOGISMS.

Hypothetical Syllogisms are quite different from those Syllogisms which we have been treating of

up to the present. They are much simpler, much easier, much more in use, and practically they require only one very simple rule as a test of their validity. In fact they do away with all the rules previously given in this little treatise for Syllogisms and also with all the complications that may arise out of these rules for *beginners*.

I should, in truth, be very much inclined earnestly to recommend beginners not to mind any of the rules previously given for Syllogisms, but to confine all their attention to Hypothetical Syllogisms, and the one rule for them until they had thoroughly mastered it and its application to analysis as I shall describe fully in Part II.

Thus they should in every proof, that they want to analyze, look out first diligently for the point (or *Proposition*) to be proved. When they have found this *they* should write it down and place the word "if" after it. Then they should seek for the point on which the whole argument hinges and put it after "if."

All this subject, as I said before, I shall discuss in great detail in Part II.

N.B.—A beginner in Logic might, with great profit, omit nearly all I have written up to the present and begin here at Hypothetical Propositions and Hypothetical Syllogisms. Perhaps it would be well to read the first four or five pages about Logic and

Propositions, but then he might omit, "Conversion of Propositions," "Opposition of Propositions," and the "Rules for Syllogisms," reading merely the few paragraphs on the Syllogism and the test of a good argument.

A **Hypothetical Syllogism** is one in which you have **three Propositions of such a nature** that if you admit the first Proposition and the second Proposition you must admit the third, but in addition to this one of the Premises must be a **Hypothetical Proposition**, or a Proposition with "if" in it.

V.G. : The ground is wet if it has rained ;
But it has rained ;
Therefore, the ground is wet.

Here if you admit the first and second Propositions you must admit the third. You may deny that "it has rained," or you may say that even though "it had rained," still the ground might not be wet for it might have been covered. But you **cannot admit that "it has rained," and further that "if it has rained it necessarily follows that the ground is wet,"** you cannot I say admit these two propositions and then turn round and deny the Conclusion, viz. :—that "the ground is wet."

The rules for Hypothetical Syllogisms are **EXCEEDINGLY** simple. In fact the one great rule is—**"if you admit the Antecedent, i.e. the assertion**

AFTER "if," you must then of necessity admit the **Consequent** or the assertion *before* "if."

V.G. : The ground is wet if it has rained ;
But it has rained ;
Therefore, the ground is wet.

This in reality is the only rule that need be learned and applied. But it should be applied over and over again. No other rule should be even mentioned till this has been firmly established and driven in so that it could never be forgotten.

NOTE.

However, should you wish to go a little more into detail, you may remember that in reality there are four rules for Hypothetical Syllogisms, though as I said, only one of them is very important. These four rules can easily be made out by the student himself at any moment by reference to a simple example.

Let the Hypothetical Proposition be :—

"This man is unfit to travel if he has small-pox."

Now, in reference to this Proposition, we might do four different things.

1. We might **affirm** the assertion AFTER "if."
2. We might **deny** the assertion *after* "if."

3. We might **affirm** the assertion *before* "if."

4. We might **deny** the assertion *before* "if."

(a) Clearly, if you *affirm* the assertion *after* "if," viz., that "this man has small-pox," then you must of necessity affirm the assertion *before* "if," viz. :—
"He is unfit to travel."

(b) If, on the contrary, you *deny* the assertion *after* "if," viz., that "he has smallpox," and say that "he has not small-pox," you cannot from this infer that "he is **fit** to travel," for he **might have fever**.

(c) Thirdly, if you affirm the assertion *before* "if," viz., that "this man is unfit to travel," you cannot from this conclude that "he has small-pox," for he might have fever, and then also he would be unfit to travel.

(d) Lastly, if you deny the assertion *before* "if," and say "he is fit to travel," then it follows that "he has not small-pox," for if he had he certainly would not be able to travel.

SUMMARY OF LOGIC.

IMPORTANT POINTS TO BE KNOWN AS FAMILIARLY
AS THE ALPHABET, AND TO BE APPLIED CON-
STANTLY AND WITH SCRUPULOUS EXACTNESS.

1. A Proposition is a sentence in which there is something affirmed or denied of some other thing.

A sentence that does not affirm or deny but

merely asks a question or gives a command, etc., is not a Proposition.

2. A Proposition consists of three parts, and only three—the Subject, the Attribute, and the Copula.

Remember nothing else can be the Copula but “*is*” or “*are*.” Be very careful **at all times** to reduce the principal verb in the sentence to an equivalent phrase having the word “*is*” or “*are*” making the assertion or denial.

The **Subject** is the Nominative to the **Principal Verb** together with all its qualifying words and phrases.

The **Attribute** is all that is affirmed or denied of the Subject with all its qualifying words and phrases—in fact all the Sentence except the Subject and “*is*” or “*are*” constitute the Attribute

3. A word or term is said to be “taken universally” when it has the word “all” or some equivalent word expressed before it or necessarily understood.

A word is said to be “taken particularly” when the word “some” is expressed before it, or of necessity understood.

4. The **Attribute** of an **Affirmative** Proposition is **always** taken particularly, or has the word “some” understood before it.

V.G.: “All men are mortal”=“All men are some of the mortal things in the world.”

Be sure always to break up a Proposition in this way, else you may have endless confusion. This is about one-third of Logic.

5. The Attribute of a Negative Proposition is always "taken universally."

Hence a Universal Affirmative is always converted into a Particular.

A Particular Affirmative into a Particular Affirmative.

A Universal Negative into a Universal Negative.

And a Particular Negative cannot be converted.

6. An Indefinite Proposition such as "Birds sing" must be reduced to a Universal Proposition or to a Particular one before it can be used in argument. Be very careful on this point, as neglect of it causes many fallacies.

7. A Syllogism is an argument consisting of three Propositions, which are of such a nature that if you **admit** the first and second Propositions you **must** admit the third.

Here we have the great test of a Syllogism : Is it such that if you admit the first and second Propositions you must admit the third? If so it is a good Syllogism, if not it is bad.

This one rule is sufficient by itself, and can do away with all others if only we can apply it.

8. The foundation of all Syllogistic reasoning is :—

1. If two things agree with a third, they agree with each other.
2. If one thing agrees with a third, and a second thing does not agree with that same third, then they disagree with one another.

Or it may be put thus :—

- (1) Whatever can be affirmed of a whole class can be affirmed of any individual in that class.
- (2) Whatever is denied of a whole class may be denied of any individual in that class.

9. The principal rules for Syllogisms are three.

- (a) A Syllogism must have three, and only three, Terms—three, and only three, Propositions.
- (b) The Middle Term must be “taken universally,” at least once.
- (c) No Term is to be taken in a wider sense in the Conclusion than in the Premises.

10. For Hypothetical Syllogisms the one and only rule of importance is that “If in the second sentence you affirm the Proposition which occurs **after** ‘if’ in the first sentence, then in the Conclusion you

must affirm the Proposition that comes **before** 'if' in the first sentence."

V.G.: If you say—

(1) "The ground is wet if it has rained," and then if you say (2) that "it has rained," you must conclude therefore "the ground is wet."

PART II.

PART II.



CHAPTER I.

LOGICAL ANALYSIS.

WE have now finished (sufficiently) our study of the theory of Logic ; but **by far the most important and most neglected part yet remains** to be treated of. In this especially does the present treatise differ from all previous ones—that it lays much stress on this subject. **This, in truth, is the all-important point in Logic.** It is utterly vain and useless to know the Laws of Logic if we do not **employ** them for the end for which they were intended. Of what good would it be to us to know the rules of Arithmetic if we did not apply them ?

It is of little value to know the rules of any science, unless we reduce them to practice. To know the theory of addition, subtraction, multiplication, and division in Arithmetic, and even of proportion, would be of small consequence if we could make no use of them.

Up to the present, then, in this little treatise, we have been trying to find out **what a Syllogism is, and what a Proposition is, and how its Terms are**

taken, whether "universally" or "particularly." But all this was only a means to an end. What we wanted to find out finally was: When is a proof a good proof, and when is it bad?

In order to answer this question we said it was necessary to reduce the proof in question to a Syllogism, and then test it by the rules of Syllogisms, and see whether it was a good Syllogism or not. It is a good proof if the Syllogism into which it is put does not offend against any of the rules of Syllogisms.

It is, therefore, of the utmost importance to be able to reduce any proof to a Syllogism. This is, in fact, the really important part of Logic, and yet most Treatises on Logic do not show you how to do so, but strangely enough they quietly **suppose** you **are able** to do so.

As law does not show you how to catch a thief, or even how to procure evidence to show that such a man is a thief; but it only tells you that **if** you **catch** the **thief**, and **if** you can further procure evidence to show that he is guilty of such and such an act, then it declares that that act is a **theft** so, in like manner, Logic does not tell you how to **reduce** an **argument** to a **Syllogism**; but it **supposes** you to have done this (though it may be **most difficult**), and when the argument is in the form of a Syllogism it tells you that if this Syllogism

so formed offends against any of the laws of Syllogisms, then the argument is bad—if it does not so offend, then it is good.

Let us, then, devote all our energies to this all-important point, which is the only real means of drawing benefit from our study.

See quotations from Whately, Sir W. Hamilton's Reid, and Samuel Bailey, given later on.

HOW, THEN, ARE WE TO REDUCE A PROOF TO A SYLLOGISM?

This is at times a difficult point, and so we must proceed gradually, beginning at the easiest cases, and advancing to those that are more difficult. I propose the following steps—everything is easy if they are followed, else everything is difficult:—

1. Begin with propositions in Euclid. Analyze logically, from twenty to eighty propositions. This gets you in on the system, and makes you familiar with its use.

2. Analyze some of Milner's Letters, *v.g.*, Letters in his *End of Controversy*, Nos. 6, 7, 8. These are fairly short, exceedingly clear and simple, and almost mathematical in structure.

3. Then analyze some Essays in the *Spectator*.

4. Some Speeches by Cicero.

5. An Essay by Newman.

Once a person has gained the power of putting a few propositions in Euclid into a Syllogism, and also one or two of Milner's Letters into a similar form, he is safe, and knows what Logic is, and can apply it when he pleases.

HOW, THEN, ARE WE TO ANALYZE LOGICALLY, OR PUT INTO A SYLLOGISM, A PROPOSITION IN EUCLID?

RULE FOR REDUCING A PROPOSITION IN EUCLID
TO A SYLLOGISM.

1. Study carefully the proposition, then see **what do you want to prove**. This is easily done, for the point to be proved is given at the top of the proposition in *italics* as the enunciation. Fix this point *well* in your mind, and write it down on your paper.

2. Then write the word "if" after the sentence stating what you want to prove.

3. Now go to the **very end** of the proof, and see the REASON given IMMEDIATELY *before* the last "*therefore*." Express this reason in words, and place it after the "if" that you wrote down previously. The whole sentence thus formed constitutes the first Proposition of your Syllogism.

4. For the second Proposition in your Syllogism write down the phrase that occurs after "if" in your first Proposition.

5. For the Conclusion write the assertion before "if" in your first Proposition.

This may seem a little complicated, but a few examples will make it perfectly plain and simple. For example—In the fourth proposition of the 1st Book of Euclid, what I want to prove is that the two triangles ABC and DEF are equal. This assertion, then, I place first, thus—*The triangle ABC is equal to the triangle DEF if.*

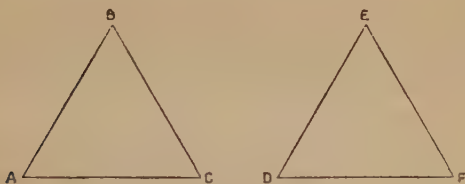


Fig. 7.

Now, I go to the end of the proof, and I look for the reason *immediately before* the last "therefore." I find it to be this:—"I have now proved that the triangles ABC and DEF **coincide** in every respect, *therefore* they are equal."

I place this phrase that occurs before the last "therefore" after "if," and so the whole sentence runs thus:—

"The **Triangles ABC and DEF are equal** if they

coincide in every respect." This constitutes the first Proposition of my Syllogism and removes all the difficulty.

In the second Proposition of my Syllogism I affirm the phrase that follows "if," and in the Conclusion I affirm the assertion before "if." So the whole Syllogism runs as follows:—

"The triangles ABC and DEF are equal **if they coincide** in every respect."

"But they do coincide in every respect."

"Therefore the triangles ABC and DEF are equal to each other."

Revise and re-do this again and again, and get the points clearly into your mind. Now that we have made the analysis, all the difficulty is over. This evidently is a good Syllogism, for if you admit the first Proposition, and also the second, you must admit the third, or Conclusion.

Of course you may ask me to prove the first Proposition or the second, but, nevertheless, the argument is a good one, for IF you ADMIT the first and second you must admit the third (and this you remember is the test of a good argument).

NOTE.

The use of reducing a proof to a Syllogism thus is merely to see if the proof is good or bad. Your position seems to be this: You

ask your adversary what is the point he is going to prove. He tells you. Well, you say to him, how are you going to prove that? Show me the points you are going to take up. He gives them to you in the form of Syllogism, and you say to him—"That is no proof at all—Even if you proved your first Proposition, and also your second, your Conclusion would not follow from these Propositions, so you may spare yourself the trouble of proving the first and second. Go first and mend your proof, and then come to me with it mended." Or, you may say—"Yes, that is a good proof, *that is, if you prove your first and second Propositions*, I will admit your Conclusion. But, as a matter of fact, I **deny your first** or your second Proposition, or both, so you must **prove** these to me before I admit your Conclusion."

Logic then might be said to be the "**Science of seeing always what precisley is the point to be proved. How your adversary, &c., proved it?**
Is the proof a good proof?"

Constant practice of this sort begets great order, clearness, and the habit of seeing always what is the point to be proved and how it is proved.

Mill says—"Let anyone learn Logic and he will see if it is no use—in making his mind clear and in keeping him from stumbling in the dark over the most outrageous fallacies"—(p. 28, *Inaugural Address*).

Again, suppose I want to prove the fifth proposition of the First Book (see Fig. 8). I want to prove

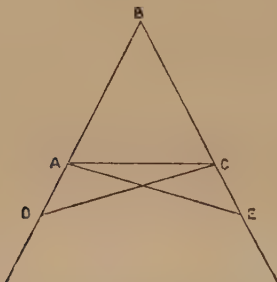


Fig. 8.

that the angle BAC is equal to the angle BCA.

I place this then first, and the word “if” after it, thus—The angle BAC is equal to the angle BCA “if.”

Now we go to the end of the Proposition and we see what is the assertion immediately before the last “**therefore.**” We find it to be this: “I have now proved the angle BAE=the angle BCD, and I have further proved that the angle CAE=ACD. **Therefore,** the angle BAC=the angle BCA.” Acting according to rule, I place the assertion which occurs before the last “therefore” after “if,” and then my first Proposition reads thus:—

“The angle BAC=BCA if the angle BAE=BCD, and further if the angle CAE=ACD.”

My second Proposition is, but "the angle $BAE = BCD$ and the angle $CAE = ACD$."

Therefore, I conclude the angle $BAC = BCA$.

Analyze twenty or thirty propositions in the First Book after this fashion, and then proceed to do some propositions in the Second, Third and Sixth Books.

Note that in the analysis I have given just now of the proofs of the fourth and fifth propositions, I have given only the First Syllogism of each proof, that is the broad outline. In practice when you have seen that the First Syllogism is good, then you must ask your adversary to **prove** his first Proposition and also his second.

So that Logic **makes you see clearly**—

1° What you are going to prove and

2° **How you are going to prove it.**

It then tells you what point or points you ought to prove in the first place, and what in the second place, and so gives great order and clearness to anything you may write. Hence its absolute necessity for English Composition. It is here we can see the imperative necessity for the study of Logic in order to write or speak well. We are all constantly trying to prove something. Now our proof, if it is to be a good one, must be a good Syllogism.

I have put these proofs merely in the form of a Hypothetical Syllogism, as that is perhaps the

easiest to begin with, in order to see the point and what the proof depends on. Besides it is much easier to give merely mechanical rules for reducing a proof to this form rather than any other. However, after a little the Hypothetical Syllogism becomes perplexing as you have to prove a Hypothetical Proposition, and a boy often fails in this. He misses the point. Of course, when a boy can reduce a proof into a Hypothetical Syllogism he can easily reduce this Syllogism to the Categorical form, *v.g.*: “ $ABC=DEF$ if both are equal to xyz .”

“But they are, etc.”

This can be put thus: “Triangles that are equal to the same are = to one another.” “But ABC and DEF are equal to the same xyz .” “Therefore they are equal to one another.”

When you have mastered thoroughly this point of making an analysis of any proposition in Euclid, then, and not till then, you may go on to Milner's Letters and finally to Cicero and Newman in the order mentioned above in Chapter I., Part II.

Few can imagine what advantages they will gain from this practice. If you have gained this you have done all that is necessary. To get so far would be of immense importance.

Another way for stating this rule for reducing a Proof to a Syllogism is this : 1° See precisely what is the point to be proved.

2° Examine **very carefully on what precisely does the whole proof turn.**

3° Write the point on which the whole proof turns after "if" and then proceed as above.

N.B.—For further detailed information on this point see twenty pages on "On the Making of Abstracts."

CHAPTER II.

ON RAISING OBJECTIONS TO THE PROOF.

When a person is right so far he may begin to **raise difficulties in reference to every part of the proof**—to the **construction**, etc., to secure that no point in the proof escapes unchallenged and that no fallacy slips in. *V.G.*: In the second

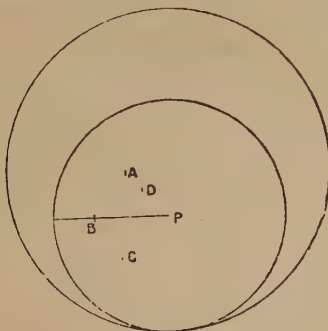


Fig. 9.

proposition of the First Book of Euclid which says : "From a given point draw a straight line equal to a given straight line." Here you may ask "How would you prove the proposition if the point was at A, B, C, D, etc. ? Would the same proof hold ? Show that it would. Perhaps the circle might fall in a different position." Raise as many difficulties as you possibly can. This trains you to **keenness, caution, circumspection.** It gives you the habit of looking round a question on every side and of not admitting that a point is proved till you are perfectly clear on the matter.

This a most useful practice.

Do many examples.

CHAPTER III.

ON RAISING OBJECTIONS TO THE MEANING OF EACH PROPOSITION AND EACH TERM IN THE SYLLOGISM.

After this you may proceed to examine carefully the precise meaning of each **Proposition** or **Definition**. Finally you may examine the meaning of individual words. However, this is a most difficult point, and produces, I may say, the highest culture. In fact, to find out the meaning of such a word as Education, Civilization, Progress, Elocution, History, etc., may easily take a year or two.

We are in search of truth. We want to know what to hold on this point or that. Now, error may enter (into our Conclusions) in one of **three** ways, and in no other way, either through the **Proof**, or the **Proposition**, or the **Words**.

I. It may enter through the **Proof** by our admitting as a valid and good proof one which in reality is not so. Against this danger Logic guards us fully. If we analyze our proofs after the fashion above explained we ought not to be duped by any worthless proof. We ought not to admit that anything was proved until we have made sure of it and tested the proof by applying the rules of Syllogisms to it carefully. Examine each Syllogism, and the proof of each Proposition in each Syllogism. So the rules for Syllogisms guard us fully against this source of error.

II. But **not only** may an error enter through the **Syllogism** or the **Proof**, it may enter through **any of the Propositions** in the Syllogism. You may admit a Proposition as true which is not so in reality, or you may admit it in one sense and not in another.

It is of the **utmost** importance then to see *what* precisely is the **meaning** of each Proposition. For this end Logic gives us no assistance. It gives us no means of making out the **meaning** of a Proposition or its **truth**. In fact it could not do so, nor

could any Science. If any Science could supply a means for knowing the meaning of each Proposition, and of ascertaining whether it was true or not, it would almost dispense with every other Science or branch of knowledge.

All that Logic can do in reference to this matter is to INSIST STRONGLY with its students that it is a point of the utmost importance, and to warn them most solemnly that they ought to attend to it, and see that they **admit no Proposition** without seeing **clearly its meaning**.

It ought to impress on them that when they have seen that the Syllogism is good they ought then, *with the MOST EXTREME CARE*, **examine each assertion**, and see its meaning.

They ought to ask themselves what is the precise meaning of each assertion. Might it mean this, or this, or this? They ought to torture it in every shape and form.

This is a point in which most treatises on Logic (or the Science of Reasoning) fail. They show you how to **examine a Syllogism**, not how to **examine a Proposition**.

I should be strongly inclined to recommend long and careful practice on this point. For this end no better exercise can be devised than a thorough conscientious scrutiny of the enunciations of propositions in Euclid. There the point

is very clear and precise and definite. There is no difficulty in reality about the real point to be proved, but the words of the enunciation may introduce much difficulty.

V.G. : In the seventh proposition, First Book, the enunciation says—"On the same base and on the same side of it, etc." Here you may ask "What is the meaning of 'base'?" "Might not any side of a triangle be the 'base'?" etc.

"And on the **same side** of it."

"How many sides has a line?"

"An infinite number. In Plane Geometry, perhaps, only two."

"Is it necessary to say 'on the same side of it'? Might you have the triangles **equal** on opposite sides?"

"Yes."

Therefore it is necessary to say "on the same side of it."

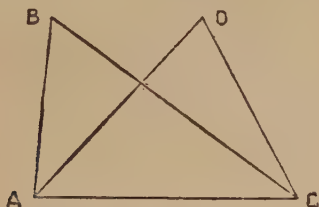


Fig. 10.

"Well, what precisely are you going to prove? Is it that AB cannot be equal to AD?"

"No."

"Or that BC cannot be equal to CD?"

"No."

"What then is it you wish to prove?"

"That AB cannot be equal to AD AT the SAME TIME that BC is equal to DC."

"Could AB be equal to DC and AD equal to BC at the same time?"

"Yes."

"What, then, do you say cannot be, etc., etc.?"

This is an excellent practice for enabling one to get the HABIT of **seeing precisely** on all occasions **what he is going to prove**, and of **clearing up all doubts and obscurities**.

Raise difficulties in this way in reference to as many enunciations in Euclid as possible, and if you try you can raise difficulties to every proposition.

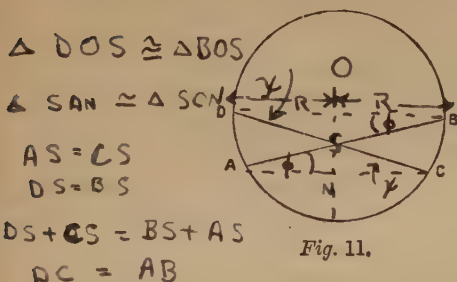
Thus in the Third Book you have the proposition which says:—"Two chords which do not pass through the centre of a circle cannot bisect each other."

"What is the meaning of chord?" "Would it do to say two lines?"

"No."

"Why?"

"Because if they do not reach the circumference and terminate there they may bisect, and the proposition would not hold."



“What do you mean by the phrase, ‘Do not pass through the centre’? Might one pass through the centre?”

“Yes.”

“Either might?”

“Yes, but not both.”

“What do you mean by the phrase, ‘Do not bisect each other’? Might one bisect the other?”

“Yes.”

“AB might bisect DC or DC might bisect AB, but AB could not bisect DC at the same time that DC bisects AB.”

When you have proceeded somewhat with this study you will find that you have got the inestimable habit of asking yourself on all occasions: What precisely am I going to prove? This trains to accuracy. “Inaccuracy is the besetting sin of all, young and old, learned and unlearned.” We

don't know what we are talking about." So says Cardinal Newman.

If the question submitted for discussion is:—"Were the Middle Ages dark?" I will ask myself: "What do I mean by the **Middle Ages**?" "Do I mean the period from 500 to 900 or from 900 to 1300, etc." "Again, what do we mean by '**dark**'? When would you say that an age was **dark**? Do you mean that it did not know as much about science as we do—that there were not so many books, etc.?"

Common sense tells us that until we perceive clearly what we are about to prove we should not proceed to prove it.

Again, "Is a monarchical form of government better for a population than an absolute rule?" Here, as Cardinal Newman says, "What a number of points have to be clearly apprehended before we are in a position to say one word on such a question! What is meant by 'constitution'? by 'constitutional government'? by 'better'? by 'a population'? and by 'absolutism'? The ideas represented by these words ought to be sufficiently, even though incompletely, apprehended before we have a right to speak." (*Idea*, p. 498.)

III. The third and last channel by which errors may enter our reasonings is **Words**.

For either the **Proof** is bad and so the Syllogism is invalid.

Or you **admitted a Proposition** that you did not understand distinctly ; or not in the sense of your adversary ; or before it was clearly proved or lastly—

You did not mean the same thing by the **Terms** of the **Proposition** as your adversary did ; or, perhaps, neither of you had a very clear idea of what you meant by the various terms.

[This last is the most fruitful source of error.] How many people will talk on Education, Civilization, Elocution, History, Progress, without having any clear idea of the meaning of these words.

In any essay or discussion we ought to be sure to lay down for ourselves what *we* mean by these or similar words. But how many go on with what Cardinal Newman calls, “the vaguest idea possible of what they are talking about” ?

So necessary is this point of defining clearly all the terms we use that in an Act of Parliament every single word of importance, even the **most simple**, is explained.

V.G. : For the purposes of this Act let it be known that by “an assembly” we mean “any body of 4 or 5 men who come together for the purpose of, etc.,” by “Dublin” we mean “the district comprehended within, etc.,” by “Conspiracy” we mean “any, etc.”

In fact it is scarcely too much to say that nearly all great lawsuits turn on a definition, *v.g.*, "What is **Libel**?" "What is a **Conspiracy**?" "What is **International Law**?" "What is a **Ship of War**?"

Now, to guard against this source of error, Logic gives us but little assistance. It treats of definitions to be sure, and tells you what a definition is and what qualities it ought to possess as clearness, brevity, &c., but it does not insist, as it ought to, on the **supreme importance** of defining each important word you use as far as you can. This, I regard, as a great mistake.

It ought to insist that everything cannot be defined, some things are too simple for definition. If everything could be defined we should never come to the end, for you would say, define this—then the words you used in that definition, etc.

Logic ought to point out that most words, except mathematical and scientific terms, have no absolutely correct definition, that is true to the exclusion of all others; *v.g.*, there is no one definition of Education, Rhetoric, that is true and all the others false. All that is required is that you know and can state distinctly what you yourself mean by the word when you use it.

I should be inclined to think that for higher culture it would be most important to give rules by

means of which we could find out the meaning of certain words. (See Appendix on Definition and Meanings of Words; also Abbott's *English Lessons for English Readers*, where he treats of Definition.)

PART III.

ON THE MAKING OF ABSTRACTS.

ABSTRACTS.

As this little treatise was written principally with a view to enabling persons to make a logical abstract of what they read, and so judge of its contents, it may not be out of place to devote a few pages to the consideration of Abstracts in general, and the Methods of making them.

I.—REASONS FOR MAKING ABSTRACTS.

1. The making of Abstracts forces one to attend carefully to the meaning of what he reads, for since he has to write down the important points treated by his author, and omit the unimportant points, he must be earnest in his examination of these.

This in itself is of immense importance. It is wonderful how little we know of what the author said in a page of his work after reading it. It would seem as though our minds were generally asleep. Only try the experiment with yourself or with others and you will be astonished at the result.

2. It powerfully fixes his attention on the important points, and so impresses them indelibly on his mind, whilst it teaches him to neglect completely what is not important. Thus it leaves out all the unimportant details, which are so many

that they could not possibly be remembered, and which, by their multiplicity, even push out of the mind the important points, and prevent them from becoming rooted in the mind. This is an invaluable habit.

3. It compresses the matter (lessons, etc.) into a very small space, say into $\frac{1}{10}$ or $\frac{1}{20}$ of the original volume, and **so enables a person to go over the subject ten or twenty times**, as is essential if we mean to get a good grasp of it, and not merely once or twice, as is generally the case. Besides this condensation of the matter into a small space gives the mind great power and mastery over it, for we often take in from a condensed rule or paragraph of three or four lines what we completely failed to grasp in four or five pages of the most lucid explanation.

4. It makes us see the **structure** of what we read in essay, letter, or lesson. It makes us see what was the point to be proved, how it was proved, what were the various steps in the proof, how each of these was developed, what were the illustrations employed, etc., etc. And thus it renders the subject much easier to be remembered as one thought grows out of another and is suggested by that other according to the law of association of ideas. Thus if you know a few great principles in Electricity or Light you find you can explain every instrument and remember every detail with ease.

5. If we frequently make Abstracts of what we read it enables us to study a subject by ourselves and not need the aid of others. Too many are inclined to walk on crutches. It also gives us more confidence in our own powers seeing we can work for ourselves, and it shows us that few subjects are difficult if attacked systematically. It also makes study a pleasure instead of a pain, as it begets a sense of mastery and power.

6. It is the only hope for a bad memory—to write out a short abstract of one's work, and to go over it again and again.

7. For the study of English Composition this study of Analysis is invaluable. As Dupanloup put it—“*Lisez les grands auteurs*”—“*Etudiez les grands modèles.*” “*Faites les Analyses.*” It was thus that Bossuet and Fénelon taught their pupils. It was thus that Rollin in his *Belles Lettres* taught. They are never tired of his precept, “Faites les Analyses.”

This practice cannot be too strongly recommended. It teaches one how to develop a thought, how to bring in the attendant circumstances, how to heighten its effect, how to introduce the illustrations, etc. This it does by first stripping the thought of all its adornments, and showing it to you in its original bareness and simplicity, and then showing you the same thought as it comes from the hands of the artist in all its force and

grandeur. A striking example of the advantage of such analysis is given by Rollin, when he studies, in his *Belles Lettres*, Cicero's argument in defence of Milo, from the mere fact that "Milo was looking for the consulship, and, therefore, did not kill Clodius."

Stated thus, there does not seem to be much force in the argument. But when Cicero handles it, and dwells on all the attendant circumstances, its force seems to be irresistible. When he paints up the feverish anxiety of a man that is looking for the highest honour in the state; how he scans the eyes, the looks, and weighs the words of the populace; how he is alarmed at the faintest whispers, is afraid even of his best actions; when he points out how delicate, frail, and uncertain a thing is popular favour, and, on the other hand, the folly and madness of killing Clodius in broad daylight, when accompanied by his wife and servants, the conviction forces itself irresistibly on you that it would be impossible for any man to act in such a fashion. All this art analysis teaches, or at least enables one to see and admire.

8. Lastly, I believe it is impossible for most persons to get a mastery over any difficult essay or book unless they make an analysis of it. The mere concentration of mind necessary for this is wonderful, and will never be gone through until it is absolutely necessary. For myself, I know I never

got a firm hold of any subject or book till I first made an analysis of it.

SOME AUTHORITIES ON THE IMPORTANCE AND NECESSITY OF ABSTRACTS.

Quick, a remarkable educationist, says—"The Art of Précis should be practised in all schools and in all subjects. Where good books are used on history, etc., the making of abstracts is a capital exercise of intelligence, and serves to fix the really important points.

Bacon says, "Writing maketh an exact man."

Whately writes, in his *Easy Lessons on Reasoning* (page v.)—"For students no exercise could be devised more calculated to facilitate their study than that of carefully preparing an Index, and also expanding the Table of Contents so as to give a brief summary of the matter of each lesson."

Mill remarks—"If you want to know if you are thinking rightly put your thoughts into words. This practice makes us think clearly even when it cannot make us think correctly. It makes us see the principles, assumptions, and consequences involved in our opinions."

John Morley says—"Knowledge is worth nothing until it is your own, so that you can reproduce it in

a precise and definite form. Nobody can be sure that he has got clear ideas on a subject till he puts them on paper in his own words. **It is an excellent plan to write a short abstract of what you read, or to ask yourself what question you expect answered** before you read. *This keeps us from reading with the eye only gliding vaguely over the page, and helps to place our new acquisition in relation to what we have read before.* This is an **excellent** practice for **concentrating** your thought on passages and making you **alive** to the **real point**. This takes trouble, but **else we have only half-hatched ideas.**"

Samuel Bailey says—"This difficulty of **reducing** an **argument** to a **Syllogism** is the **great difficulty** which the searcher for truth has to cope with. The validity or invalidity of an argument is *easily* discerned when it is reduced to two or three Propositions. The **infallible** way to **test** an argument is to throw it into **precise** and perspicuous language. **Fallacies never** occur when the premises are **fully** and **clearly** stated in proper **juxta-position** with the conclusion." (Of course by Analysis.)

Whately writes—"If you wish to acquire a facility in applying the rules of Logic, **analyze** some of Euclid's demonstrations."

Again, "Advanced students should be exercised in Logic by reading some argumentative work, requiring an analysis of it on logical principles." (*Logic*, Pref., p. xv.).

SAMUEL BAILEY ON ABSTRACTS

(TAKEN FROM HIS "THEORY OF REASONING.")

Logic may be considered as a guide to correct conclusions by furnishing tests for false arguments.

In this character we might expect two things of it:

1. That it would **give directions for reducing with readiness and precision the arguments we meet to the form of a Syllogism.** 2. That it would supply the best rules for testing these Syllogisms.

In respect of the first of these ends **common treatises on Logic afford little help.** Yet **this difficulty of reducing an argument to a Syllogism is the great difficulty which the searcher of the truth has to cope with.** The validity or invalidity of an argument is easily discerned when the argument has **been stripped of unnecessary incumbrances and reduced to two or three Propositions.***

Logic abounds with rules for detecting false arguments. It encumbers us with help here, and that often help of a very artificial character.

I have strong doubts whether errors in reasoning, such as we are speaking of, ever arise except from confusion or ambiguity of language or from such a separation of the premises from the conclusion as may occasion a misrecollection of

* The student may find useful hints for this reduction in the Abbé Gaultier's ingenious work, *An Easy Method of Making Abridgments*.

what they are. In these cases **no assistance** could be derived from logical rules.

A valid Syllogism **when clearly expressed** is discerned at once to be valid. An invalid Syllogism would be detected in the same way.

It follows that faults in Syllogistic Reasoning must be owing to **want of clearness and preciseness** of expression, and the **infallible way to test** the soundness of Syllogism is to supply what it wants—to **throw** it into **precise** and **perspicuous** language. This **must** be **sufficient in the nature of the case** to bring all errors to light.

Fallacies never occur except from **ambiguity** or **confusion of language**, in other words they **never occur** when the premises are **fully** and **clearly stated in proper juxta-position** with the conclusion. (This juxta-position is secured by Analysis hence we **may see the paramount importance** of this subject.)

It sometimes happens that the premises and conclusion are widely separated from each other by irrelevant matter, superfluous verbiage, or prolix dissertation, and then a wrong conclusion is arrived at not from wrong inference, but from misrecollection of the premises. This error could not be detected by any logical rules. But if the argument were **freed** from its **incumbrances** and if **premises** and **conclusions** were **clearly expressed**

and **brought** into juxta-position (of course by **Analysis**) the bad reasoning would be too manifest to impose on a child.

If then logical errors are due in all cases to faults of expression and separated premises what assistance does ordinary Logic give to guard against these? None. It does not even pretend to give any.

The truth is that in reasoning we are never safe without a **constant scrutiny** of all the words we employ, *i.e.*, without a **perpetual recurrence** to the **things signified**. As the *Port Royal Logic* says, "If we **ever** sin against the rules of Syllogisms it is by deceiving ourselves with the equivocation of some term."

To **draw out arguments** into **three separate Propositions** enables us to see **distinctly** and to **point out** to others the **facts** which must **be true** or **proved** or admitted in order to render the **conclusion** valid. This is often of advantage.

In studying Logic usually the faculty of looking at facts, of estimating their value, of discovering what they prove, of **extricating** *them from verbiage*, remains comparatively **unexercised**.

The third great source of erroneous conclusions is the imperfection of language (or words). This is less where the subject is simple. In Mathematical reasoning it is almost nil. In other subjects it prevails extensively.

Imperfection of language produces worst results

when the terms employed are complex, general, or abstract, and when the reasoning is complicated, disjointed, and verbose. When the words are simple and concrete, and the reasoning is well arranged and **condensed**, it has little room to operate.

The imperfections of language are universally allowed to have great effect in perverting our conclusions; and it is acknowledged and regretted that **rules** and **formulas** can do little in guarding against them. **Habits** of mind, nevertheless, can do a great deal.

By the term **imperfections** must be understood, not mere equivocation of words, but the **vagueness** and **obscurity** and **unmeaningness** of language, all of which are to be **sedulously** guarded against. The best preservative against these evils is an **intellectual habit** of **calling vividly to mind** the objects and qualities and events designated by the terms employed, of **dwelling** on the **full** and **precise meaning** of all the **words** on which our reasoning turns, of **picturing** to ourselves whatever is described or narrated, of turning the abstract into the concrete and reducing the general to the particular. This practice on all important occasions would save us from a thousand illusions.

The greatest source, however, of error transcending all others in an immeasurable degree is the gratuitous assumption of false premises without any

evidence at all. These erroneous premises are assumed in various ways. Many are mere prejudices fastened on the mind by mere tradition or instruction, or by the voice of society or books, and are never suspected of error. These form the foundation of false conclusions.

In face of these errors it is impossible to insist too strongly on the extreme importance of rigorously scrutinizing facts and terms and inferences at the **commencement** of all investigations.

The origin of a false theory, etc., may **generally** be **detected** in the very first Propositions from which it sets out. (*Theory of Reasoning*, p. 134 *et seq.*)

The justness of these observations is best shown by examples. (Here follow three examples from Ricardo on Value, Malthus on Population, and Berkeley on the Theory of Vision.)

The only cure is for the inquirer to allow no facts, no propositions, no doctrines, no principles, etc., to pass on any question without scrutinizing their character and carefully investigating the evidence on which they rest.

Here follow as an Appendix about twenty pages of Examples of Analysis and rules for the same. At the end Bailey remarks: The young student may think that the examination of all arguments in this way would require a vast deal of trouble. And there can be no doubt that to learn to think with

accuracy and precision does require no small labour, but labour which cannot be evaded if the end is to be gained. Still when by sedulous application the habit is acquired, the subsequent exercise of it is easy.

SUGGESTIONS FOR THE EXAMINATION OF AN ARGUMENT.

1. Find the point to be proved. State it briefly and as nearly as possible in the language of the author.

2. If the conclusion is obscure or ambiguous strive to find out what the author meant. If it is doubtful which of two or more propositions he intended to maintain examine the argument according to the following rules, first on one assumption then on another.

3. Next find the reasons assigned and state them in the author's words, stripping them of all irrelevant matter.

4. Examine the nature of the argument.

(a) Consider well if the facts are sufficient to warrant the general law or the particular inference.

(b) If the reasoning is demonstrative put it in the form of a Syllogism and test it. If it is false from ambiguity, etc., mark the fallacy.

5. If the original conclusion cannot be derived from the premises see if a modified one could be.

6. If the inference is valid or the Syllogism good, examine the truth of the premises or the facts asserted in them.

7. You may find that the Propositions, as stated by the author, are not true—but may be made true by some change. Then throw the argument into its most forcible shape and re-examine it.

8. If the premises are untrue, trace the error to its source if possible. Nothing gives greater command over a subject than to ascend to the origin of the mistake.

9. Remember that though the argument is fallacious the conclusion may be true. You can only say not proven.

10. In order to guard against obscurity, vagueness, etc., conceive if possible the actual things represented by the words. When the terms are complex decompose their meaning into its constituent parts.

11. When a definition of an important word on which any of the reasoning turns has been given, **make it a practice** in all obscure or dubious passages to **substitute** the **definition** for the **term**.

If the writer has given no definition form one for yourself, and use it thus.

12. When abstract general terms are used translate them into concrete language, and try how the argument will be affected.

WHATELY'S OPINION ON THE NECESSITY
OF MAKING ABSTRACTS IN ORDER
TO KNOW LOGIC.

"The student," says Whately, "who wishes to acquire a facility in applying the rules of Logic, should proceed to exercise himself in **analyzing logically** according to the rules here given, some of Euclid's demonstrations—portions of Aristotle's Works, Adam Smith's *Wealth of Nations*," etc.

I propose to give very easy and simple rules for **analysing logically** in the next part of this little book.

METHOD OF MAKING ABSTRACTS.

Since, as we have just now seen, the *greatest authorities insist so strongly* on the importance of *Making Abstracts* for **all persons**, even the *youngest*, and in all subjects such as History, Literature, Grammar, etc., I am tempted to draw out in considerable detail a very graduated Course of Analysis. Thorough graduation is the great point to be secured in teaching this subject.

I shall divide the matter into four parts.

First, I shall treat of the analysis of a **Single Sentence**.

Secondly, I shall treat of the analysis of a **number of sentences** or of a **paragraph**, or of a short story or poem, etc.

Thirdly, I shall treat of the analysis of a **Single Proof**.

Fourthly, I shall treat of the analysis of a **number of Proofs** or of a long Essay, Speech or Book.

I. In treating of the analysis of a Sentence it might be well to treat first a **Simple Sentence** then to try an **Easy Compound Sentence**, after this a **Complex Sentence**, and finally, a more **difficult Compound Sentence**.

II. In the analysis of a **number of sentences** or of a **paragraph**, I think it would be well to begin with **very short simple stories**, such as "The Lion and the Mouse," etc., then to go on to **very short**

poems, such as "Little Jim." After this the pupils might try passages from Telemachus, and finally those from Cicero, Addison, etc.

III. From this they might proceed to the analysis of a **Single Proof**. Here it is that for the first time a person feels the necessity of Logic. I should, therefore, be inclined to tell any young student of this book to begin here at the "Method of Making Abstracts," and to read nothing of Logic or Logical Analysis till he comes to this *third Section*, viz.—"**How to analyze a Proof.**" It is only at this part of his course that he will find the absolute necessity for Logic, and he will now be able to master it with great ease as he has already conquered all the preliminary difficulties of ordinary analysis. I should, therefore, **strongly urge** the student at this point to turn back and read a little on **Logic** and on the **Logical Analysis of Euclid**. Then he may go on to Milner's Letters and short **single** proofs taken from Cicero, Newman, etc., as explained at pp. 63-9.

IV. Lastly, one might try the analysis of a large **number of Proofs**, all combining to prove one point, *v.g.*, an Oration of Cicero's, or a whole Essay of Newman's, or a large work on some subject.

In treating this subject I shall follow in the main for the **First and Second Sections** the Abbé Gaultier's Easy Method of making Abridgments, but I shall try to make the subject much more simple, graduated and complete.

SECTION I.

HOW TO ANALYSE A SINGLE SENTENCE.

THE ABBÉ GAULTIER'S EASY METHOD OF MAKING ABRIDGMENTS.

Of this book the famous Samuel Bailey says—
“The student might derive some useful hints from
the Abbé Gaultier's ingenious work.” (*Theory of
Reasoning*, p. 134.)

1. “Analyse the sentence or paragraph.”
2. “Compress this analysis (that is, leave out
everything that is not essential).”
3. “With these compressed parts form a sen-
tence and then you have the Abridgment.”

DETAILED RULES FOR ANALYSING A SINGLE SENTENCE.

1. Find the **principal** Verb or the Verb that
makes the principal assertion.

2. Then **Find** the **Nominative** and **Object** to this
Verb according to the simple rules for parsing.
That is—To find the Nominative ask the question
“Who?” or “What?” **before** the Verb.

To find the Object ask the question "Whom?" or "What?" **after** the Verb.

When you have found the Nominative, the Verb and the Object then **form a sentence of these** and you **have the Abstract.**

N.B.—In obedience to this rule **reject everything that is not absolutely essential** to the true meaning of the sentence. For instance, **reject all adjectives, adverbs, qualifying phrases,** etc.

Reject all phrases responding to the questions "When?" "Where?" "Why?" "How?" "By what means?" "How much?" etc.

All this will appear much clearer from an example. Take the following :—

MAKE AN ABSTRACT OF THE FOLLOWING.

(a) (In that season of the year (a) "When? In autumn." when the serenity of the sky, the various fruits which cover the ground, the discoloured foliage of the trees, and all the sweet but fading graces of inspiring autumn open the mind to benevolence and dispose it for contemplation) **I was wandering** (b) What is principal verb? "I was wandering." in a beautiful and romantic country (b) Where? (c) Till what time? (c) (till curiosity began to give way

to weariness) and I sat me down (*d*) ^{I sat down.}
 (on the fragment of a rock over- ^{(d) Where?}
 grown with moss, where the rustling "On a rock."
 of the falling leaves, the dashing of
 the waters, and the hum of the
 distant city soothed my mind into the
 most perfect tranquillity) and slept ^{I slept.}
 insensibly (*e*) (as I was indulging the ^{(e) At what}
 agreeable reveries which the objects time.
 around me naturally inspired).

ANALYSIS OF FOREGOING ABSTRACT.

In this Extract what is said is

"I wandered, sat down and slept," and this is the Abstract of the passage. All the other phrases answering to the questions "When?" "Where?" "Till what time?" etc., may be left out as unimportant.

SECOND RULE.

You may even shorten an Abstract, such as the above, at times by substituting for an enlarged and complicated Nominative—one word or a short phrase.

The same contraction may take place in reference to the Verb or the Object

FIRST EXAMPLE.

V.G. : " Who can think that (a) (a) Put one word " Chronology " for all that is in brackets.
 (the science of computing and adjusting the periods of time ; the revolution of the sun and moon ; and of computing time past, and referring each event to the proper year) is fit for children ? "

ABSTRACT.

" Who can think that Chronology is fit for children ? "

SECOND EXAMPLE.

" (The nobility, all the military officers, people of the Church, administrators of law and justice, professors of sciences or of liberal and ingenious arts, rich traders) all agree in it." The best part of the nation.

Here what is contained in the brackets is equivalent to " The best part of the nation." Hence the Abstract runs thus : " The best part of the nation agreed in it."

THIRD EXAMPLE.

" He perceived from the shore (benches broken to pieces, oars scattered here and there on the sand, a rudder, a mast, and cordages floating on the waves, etc.)." Fragments of a vessel.

Here what is included in the brackets equals the "fragments of a vessel," and so the Abstract becomes: "He perceived the fragments of a vessel."

FOURTH EXAMPLE.

"Ye (a) (who listen with credulity to the whisperings of fancy, and (a) Deluded by the imagination. pursue with eagerness the phantoms of hope, who expect that age will perform the promises of youth, and that the deficiencies of the present day will be supplied by the morrow) attend to the history of Rasselas."

The Abstract is—"Ye, who are deluded by the imagination, attend to the history of Rasselas."

THIRD RULE.

Suppress all phrases that are equivalent to some phrase already used, or nearly equivalent to it. Choose one of these phrases that is more precise than the others, or that seems a recapitulation of them.

FOURTH RULE.

Suppress the same idea when expressed *negatively*, if it is expressed positively.

EXAMPLES FOR MAKING ABSTRACTS OF SIMPLE SENTENCES.

Leave out each word or phrase that is not absolutely necessary for the true meaning of the sentence

Leave out adjectives, adverbs, phrases indicating time, place, etc.

(1.) While the present century was in its teens, and on one sunshiny morning in June there drove up to the great iron gate of Miss Pinkerton's academy for young ladies in Chiswick Mall a large family coach with two fat horses in blazing harness driven by a fat coachman in a three-cornered hat and wig at the rate of four miles an hour.

(2.) A black servant, who reposed on the box beside the fat coachman, uncurled his bandy legs as soon as the equipage drew up opposite Miss Pinkerton's shining brass plate.

(3.) Although schoolmistresses' letters are to be trusted no more or no less than church-yard epitaphs; yet as it sometimes happens that a person departs this life who is really deserving of all the praises the stonecutter carves over his bones; who *is* a good Christian, a good parent, child, wife, or husband; so in academies of the male and female sex it occurs every now and then that the pupil is fully worthy of the praises bestowed by the disinterested instructor.

(4.) When the day of departure came, between her two customs of laughing and crying Miss Sedley was greatly puzzled how to act.

(5.) All which details, I have no doubt, Jones, who reads this book at his club, will pronounce to be excessively foolish, trivial, twaddling, and ultra-sentimental.

(6.) The flowers and the presents and the trunks and the bonnet-boxes of Miss Sedley having been arranged by Mr. Sambo in the carriage, together with a very small and weather-beaten old cow's-skin trunk with Miss Sharp's card neatly nailed upon it, which was delivered by Sambo with a grin, and packed by the coachman with a corresponding sneer—the time for parting came.

(7.) When Miss Sharp had performed the heroical act mentioned in the last chapter, and seen the *Dixonary* flying over the pavement of the little garden fall at the feet of the astonished Miss Jemima, the young lady's countenance, which had before worn an almost livid look of hatred, assumed a smile that perhaps was scarcely more agreeable.

(See many additional Examples at end of this Book.)

SECTION II. (PART 1.)

ANALYSIS OF A NUMBER OF SENTENCES OR OF A PARAGRAPH OR SHORT STORY OR POEM.

The next step is to proceed to the analysis of a number of sentences or of a paragraph. This is most important but generally very difficult. I think the easiest way to proceed is to begin with **very short simple Stories**, and then to go on to **short simple Poems**. In these you have a little story quite complete in itself. You see the beginning and end all in one class. You see clearly the relation of the various parts to one another, and you begin to learn what is meant by the **structure** of a piece. You observe in each case an author wants to do something or another, and you see the means he uses to attain this end.

Too much time cannot be given to this practice, nor can too many examples be done.

The great difficulty is to select stories and poems that are sufficiently easy. I should suggest for the stories McDougall's "Short Stories, etc., for Composition," or Chambers's "Short Stories" or Longmans', etc. Hales, in his "Suggestions for the teaching of English," says that Old BALLADS like "Rosabelle," or a chapter from the Waverley Novels, or extracts from Pope's "Iliad" are the best for young people. It

might be well to begin with **much simpler** poems, such as "Little Jim," "The Spider and the Fly," Hewitt; "The Beggar Man," Aiken; "The Ant and the Cricket," Southey; "Bruce and the Spider," "The Better Land," Hemans; "Oh, call my Brother back to me," Hemans; "Lucy Grey," Wordsworth; "The Brook," Tennyson; "The Psalm of Life," Longfellow; "The Wreck of the Hesperus," "The Village Blacksmith," Longfellow; "The Battle of Blenheim," "The Pet Lamb," Wordsworth; "The Faithful Dog," "The Sailor's Mother," "The Daisy," "Ode to Spring." These and many similar poems may be found in "Nelson's Royal Readers" or "Hawley's Senior Composition," etc. More difficult examples might easily be got from Scott, Cowper, Milton, Shakespeare, etc., and from such collections as Hales' Longer English Poems or Bowen's Studies in English.

EXAMPLES.

RULE.—(1) Make an analysis of each sentence as above, leaving out everything that is not essential and expressing the rest in the fewest possible words.

(2) Condense these short sentences into a much smaller space.

All this will be very clearly understood from an Example.

ANALYSIS OF A NUMBER OF SENTENCES OR A
PARAGRAPH, OR A VERY SHORT STORY
OR POEM.

A lion faint with heat and weary with hunting was lying down to take a sleep under the spreading boughs of a thick shady tree. It happened that while he slept a company of scrambling mice ran over his nose and wakened him. Starting up, he clapped his paw upon one of them, and was just about to put it to death when the little suppliant begged for mercy, imploring him not to stain his noble character with the blood of such a despicable beast. The lion considering the matter, thought it just as well to release the little trembling prisoner.

Not long after, roaming through the forest in search of his prey, he chanced to run into a strong net set by the hunters, from whence, unable to free himself, he set up a hideous and loud roaring. Hearing the lion roar, the mouse repaired to the spot and told him to fear nothing, that he knew how to set him free. Immediately he set to work, and with his little sharp teeth gnawing through the knots and fastening of the ropes, set the lion at liberty.

AN ABSTRACT OF EACH SENTENCE OF THE
FOREGOING.

- (1.) A lion slept under a tree.
- (2.) Mice ran over his nose and waked him.
- (3.) He was about to kill one.
- (4.) The mouse said he was too despicable, and so was let free.
- (5.) The lion was caught in a net and roared.
- (6.) The mouse came and set him free (by gnawing the ropes).

VERY SHORT ABRIDGMENT.—“A lion awakened by a mouse was about to kill it, but let it free. The lion was caught in a net and the mouse freed him.”

Here you might point out how a story is built up by asking the various questions When? Where? Why? How? etc., etc., and answering these. For example, take the last analysis and expand it thus:

1° “The lion was asleep.” Why? Where? Because “he was faint with heat and weary with hunting.” “He slept under the spreading boughs of a thick, shady tree.”

2° “He awoke.” What waked him? And what did he do when he waked? “A company of scrambling mice ran over his nose and waked him.” What did he do? “Starting up he put his paw on one of them and was about to put it to death.”

3° What did the mouse? “The poor little suppliant begged for mercy.” What reason did the mouse allege? “He implored him not to stain his noble character with the blood of such a despicable beast.”

4° What did the lion do and why? “The lion, considering the matter, thought it just as well to release the little trembling prisoner,” etc.

N.B.—This would be an excellent practice for teaching young people how to write.

LITTLE JIM.

Description of Cottage.

{ The cottage was a *thatched* one,
The outside old and mean:
Yet everything within that cot
Was wondrous neat and clean.

Description of Night.

{ The night was dark and stormy,
The wind was howling wild,
A patient mother knelt beside
The death-bed of her child.

A little worn out creature
His once bright eyes grown dim; } Description of Jim.
He was a collier's only child—
They called him little Jim.

What the Mother said and did.

{ And, oh! to see the *briny* tears
Fast *hurrying* down her cheek;
As she offered up a *prayer in thought*,
She was afraid to speak

Lest she might waken one she loved
Far better than her life;
For there was all a mother's love
In that poor collier's wife.

With hands uplifted see she kneels
Beside the sufferer's bed,
And prays that He will spare her boy
And take herself instead.

She gets for answer from the child,
Soft fell these words from him:
"Mother, the angels do so smile
And beckon little Jim!

"I have no pain, dear mother, now;
But, oh, I am so dry:
Just moisten poor Jim's lips again,
And, mother, don't you cry."

With *gentle*, TREMBLING haste she held
The tea-cup to his lips;
He *smiled* to THANK her as he took
Three *tiny* little sips.

"Tell father, when he comes from work.
I said good night to him;
And, mother, now I'll go to sleep"—
Alas, poor little Jim!

She saw that he was dying,
The child she loved so dear
Had uttered the last word that she
Might ever hope to hear.

The cottage door was opened,
The collier's step was heard:
The father and the mother met,
Yet *neither spoke a word*.

He knew that all was over—
He knew his child was dead;
He took the candle in his hand
And walked towards the bed.

His QUIVERING lips gave token
Of grief he'd fain conceal;
And, see, his wife has joined him—
The stricken couple kneel.

With hearts bowed down with sadness
They humbly ask of Him
In heaven once more to meet again
Their own poor little Jim.

REMARKS.

Here you may remark that the first stanza gives a description of the cottage, the second of the night, the third of little Jim, the fourth, fifth, and sixth of

the Mother, the seventh and eighth of what Jim said, etc., etc. You might then ask why the poet speaks of the cottage? Perhaps, **to excite our sympathy.** It was very poor and mean, but very clean. And why does he speak of the wild stormy night? **To bring out the contrast with the silence within,** etc., etc.

En passant, I may remark that the teacher might ask why the poet says "briny tears," and why "fast hurrying"?—to show the intensity of the grief. Also, he might ask why he said "trembling haste," etc., and refer to each of the words in italics or strong type.

After some practice of this sort one might proceed to the analysis of more difficult paragraphs. As examples of this sort of analysis I should suggest the study of a number of short paragraphs from Fénelon's *Telemachus*. They are short and fairly simple.

FIRST EXAMPLE.

Calypso could not be consoled for the departure of Ulysses. In her grief she was unhappy in being immortal. Her grotto no longer resounded with her song; the nymphs who waited on her did not dare to speak to her. She walked about often alone, upon the flower-painted grassy meads with which an eternal spring fringed her isle; but those beautiful places far from lessening her grief only caused her to recall the sad remembrance of Ulysses, whom she had so often seen there beside her. Oftentimes she remained motionless on the beach of the sea which she bedewed with her tears, and she incessantly turned to the quarter where the vessel of Ulysses, while cleaving the waves, had disappeared from her eyes.

ANALYSIS.

In the first sentence we are told that "Calypso could not be consoled for Ulysses." What connection has the second sentence with the first? It tells us **how** much grieved she was for Ulysses. "She was **so** unhappy that she grieved to be immortal." The third, fourth, and fifth sentences continue to describe the great signs of her grief. "She would not sing—the nymphs dared not to speak to her. She walked alone in beautiful places, but these made her sad as they made her think of Ulysses. She stood motionless, looking in the direction in which Ulysses had departed."

So the whole paragraph states that "Calypso was very sad, and then gives the **signs** and **proofs** and **results** of this sadness."

SECOND EXAMPLE.

All at once Calypso perceived the fragments of a ship which had just been wrecked: thwarts broken in pieces, oars scattered here and there upon the sand, a helm, mast, cordage, floating upon the coast; then she discovers at a distance two men; the one appeared old, the other, though young, resembled Ulysses. He had his gentleness and his proud bearing with his figure and majestic gait. The goddess understood that it was Telemachus, son of that hero. But although the gods surpass all men in knowledge, she could not discover who was that venerable man by whom Telemachus was accompanied, the superior gods hide from the inferior everything which they please, and Minerva, who accompanied Telemachus under the form of Mentor, did not wish to be known by Calypso.

ANALYSIS.

Calypso discovers the fragments of a wreck—oars, etc. She sees two men—one old, the other young. She describes the young man, whom she knows to be Telemachus. She does not know the other. Why?

THIRD EXAMPLE.

Nevertheless Calypso was rejoiced at a shipwreck which placed in her isle the son of Ulysses, so like his father. She advances towards him, and without pretending to know who he is: "Whence comes to you," said she to him, "this rashness of landing in my isle? Know you, youthful stranger, that no one comes with impunity into my empire." She endeavoured to conceal under these threatening words the joy of her heart, which shone forth in spite of her on her countenance.

ANALYSIS.

"Calypso was rejoiced." Why? (or at what?) What did she do? "She advanced towards him." How? "What did she say?" "What did she do?" She endeavoured to conceal her joy.

N.B.—It might be well to do in this way many paragraphs in *Telemachus*, as it is very simple.

SPECIMENS OF ABSTRACTS IN GRAMMAR, &c.

PLURALS OF NOUNS.

Plurals of Nouns—Abstract.—Rule I. The Plural is formed by adding *s* or *es* to the Singular. *When*

do you add *s*, when *es*? You add *es* only when Nouns end in *s*, *sh*, *ch* (soft) *x* or *z*.

II. Are there **exceptions** to this Rule? Yes. Two.

(a) Nouns ending in *ief*, *oof*, *ff*, or *rf* add *s*. (b) Nouns ending in *quy* change *y* into *ies*.

III. Any **exceptions** to these **exceptions**? Yes.

(1) If Nouns end in *f*, *fe* or *lf*. Then change *f* into *v* and add *s* or *es*.

(2) If Noun ends in *y* not immediately preceded by a vowel then change *y* into *ies*.

There are some irregular plurals in *n* or *en*, etc.

GENDER OF NOUNS.

Gender of Nouns.—Abstract. Rules.—There are three ways for indicating difference of Gender in Nouns.

(1) By inflexion or a change in the word, which is done by making the feminine ending *ess*, *trix*, *ine*, or *ster*.

(2) By using a word significant of Sex—*v. g.*, he goat and she-goat.

(3) By distinct words—brother, sister.

COMPARISON OF ADJECTIVES.

Comparison of Adjectives.—Abstract. Rule I. Adjectives of one syllable have the Comparative and Superlative formed by adding *er* and *est* to the positive.

Rule II. Adjectives of more than two syllables are compared by prefixing *more* and *most* to the positive.

Rule III. Adjectives of two syllables sometimes add *er* and *est*. Sometimes they take *more* and *most*. It is all a question of euphony. (a) Adjectives of two syllables which have the accent on the second syllable take *er* and *est*. (b) Those ending in *y*, *ble*, *er* and *ow* do the same. All others take *more* and *most*.

SPECIMENS OF ABSTRACTS IN NATURAL PHILOSOPHY.

Electrical Machine.—Abstract. I. Its *Construction*. It consists of a plate of glass, etc., capable of revolving, rubbers to rub it, and a Prime Conductor insulated and furnished with points.

II. *How it acts*. The plate is caused to revolve between the rubbers. Electricity is produced on it. This Electricity comes opposite the points on the Prime Conductor. It attracts out the opposite kind of Electricity so leaving the Prime Conductor charged.

SECTION II. (PART 2).

HOW TO ANALYSE MORE DIFFICULT PARAGRAPHS.

FIFTH RULE.

If you have a paragraph to analyse, then this embodies one great central thought, qualified by many other thoughts.

Find out the great central thought by considering attentively the paragraph, and observing carefully where the absolute assertion is made that does not **depend** on any other thought, and is not related to any other, so as to describe the time, or the place, or circumstances, etc., under which the central event took place.

No sentence, then, with "If" or "When," etc., at the beginning of it, will, as a rule, contain the principal statement.

When this great central assertion is discovered, write it down, and group round it, as stating the cause, or effects, or circumstances connected with the central statement, all the other sentences.

SIXTH RULE.

When two or more paragraphs are so related that one is almost the same as the other, or merely an

expansion or explanation of that other, then suppress one or other of the passages.

SEVENTH RULE.

If the paragraphs are so related that one describes the cause of the event mentioned in the other, or the time at which the event mentioned in the other took place, etc., etc., state this fact. **Select out the paragraph that contains the principal idea or assertion, and group the others around it** as cause, or effect, or illustrations, etc., etc. Thus you will be enabled to see the **structure** and **plan** of **the whole Essay**.

A few fully worked out Examples may throw much light on the subject.

FIRST EXAMPLE.

From *Cicero pro Archid.*

"If, Conscript Fathers, I have any abilities, and I am sensible they are but small; if, by pleading often, I have acquired any merit as a speaker; if I have derived any knowledge of the liberal arts which have ever been my delight, *A. Licinius may justly claim the fruit of all.* For looking back upon past scenes and calling to remembrance the earliest part of my life, I find it was he who prompted me first to engage in a course of study and directed me in it."

ANALYSIS OF FOREGOING EXTRACT.

In this extract: "Where is the principal Verb and its Nominative?" "Where is the principal assertion?"

Clearly it is not contained in the phrase: "If I have any abilities," etc. No; this is not an assertion. But it is contained in the next phrase: "A. Licinius may justly claim the fruit of all my abilities." Here, then, is the assertion. This, then, will form the Abstract. "Who may justly claim?" A. Licinius. "What may he claim?" "The fruit of all my labours." **Put these parts together**, viz., the Verb, the Nominative, and the Object, **and you have the Abstract**. Thus, "A. Licinius may justly claim the fruit of all my abilities." "Why may he claim it?" "Because he first prompted me to a course of study and directed me in it."

SECOND EXAMPLE.

Cicero pro Milone.

"Though I am apprehensive, Conscript Fathers, it may seem a reflection on a person's character to discover any signs of fear when he is entering on the defence of so brave a man, and particularly unbecoming in me that when T. Annius Milo himself is more concerned for the safety of the state than his own, I should not be able to maintain an equanimity of mind in pleading his cause; yet **I must own the unusual manner in which this new kind of trial is conducted strikes me with a kind of terror**, while I am looking round me in vain for the ancient usages of the forum and the forms that have been hitherto observed in our courts of judicature. Your bench is not surrounded with the usual circle; nor is the crowd such as used to surround us. For the guards you see planted before all the temples, however intended to prevent all violence, yet strike the orator with terror; so that even in the forum and during the trial, though attended by a useful and necessary guard, I cannot help being under some apprehensions; at the same time I

am sensible they are without foundation. Indeed, if I imagined it was stationed there in opposition to Milo, I should give way, Conscript Fathers, to the times; and conclude there was no room for an orator in the midst of such an armed force. But the prudence of Pompey, a man of such distinguished wisdom and equity, cheers and relieves me; whose justice will never suffer him to leave a person exposed to the rage of the soldiery, whom he has delivered up to a legal trial; nor his wisdom to give the sanction of public authority to the outrages of a furious mob. Wherefore those arms, those centuries and cohorts are so far from threatening me with danger that they assure me of protection; they not only banish my fears but inspire me with courage, and promise that I shall be heard not only with safety, but with silence and attention."

ANALYSIS OF FOREGOING EXTRACT.

Where is the principal Verb or assertion in this paragraph? Clearly it is not contained in the phrase "Though I am apprehensive," etc. But it is contained in the phrase, "I must own." This is the principal assertion. "Must own" is the principal Verb.

Now, ask the question, "Who?" before the Verb. "Who must own?" "I must own." Therefore "I" is the Subject.

"Must own **what?**" "That this unusual form of trial strikes me with terror." Here we have the Object. Put these three together and they give you the Abstract, viz., "I must own that this unusual form of trial strikes me with terror."

All the other phrases and sentences cluster round this sentence to explain its parts or to add some

details, etc. *V.G.* : “ **Why** does this form of trial fright you ? ” “ Because your bench is surrounded by soldiers and they beget fear.”

“ **Why do they beget fear ?** ” “ Indeed I should not fear, for they are placed here for safety—against violence.”

“ In fact I am ashamed of my fear.” Why ? “ Because I may be thought a coward.”

2nd Assertion—“ But the prudence of Pompey (which is very great) cheers me.” Why ? “ Because he will never leave us exposed to the rage of a mob.”

THIRD EXAMPLE.

Cicero pro Milone.

“ Well do I know the length to which the timidity goes of such as are candidates for public offices, and how many anxious cares and attentions a canvass for the Consulship necessarily carries along with it. On such an occasion we are afraid not only of what we may openly be reproached with, but of what others may think of us in secret. The slightest rumour, the most improbable tale that can be devised to our prejudice, alarms us and disconcerts us. We study the countenances and the looks of all around us. For nothing is so delicate, so frail and uncertain as public favour. Our fellow-citizens not only are justly offended with the vices of candidates, but even on occasion of meritorious actions are apt to conceive capricious disgusts. Is there then, the least credibility that Milo, after having so long fixed his attention on the important and wished for day of election, would dare to have any thoughts of presenting himself before this august assembly of the people, as a murderer and assassin with his hands imbued in blood.”

ANALYSIS OF THE ABOVE.

Again we must ask where is the principal Verb or assertion, etc., in this paragraph. This is a more difficult question to answer in the present instance than in the former extracts.

The rough analysis of this paragraph preparatory to the final might be something like this, following the passage line by line. "I know the timidity of those looking for the Consulship. I know the slightest rumour afrights them." Why? "Because public favour is so frail." This being so—"Is it credible **then** that Milo would present himself for election as a murderer?"

So far we have left out many unimportant words. Remark that the word "**then**" in the last sentence of the extract clearly shows that the sentence following it is the real conclusion to be finally arrived at. All the previous sentences are meant merely to arrive at that conclusion. Consequently this is really the principal sentence or assertion, viz. : "Is it not incredible that Milo (when looking for the Consulship) would present himself before the people as a murderer." This, therefore, is the abstract of the whole passage, or is the principal assertion made.

"**Why would he not present himself before the people, etc.**" "Because people are timid, even about

their best actions, on such an occasion." "Why are they timid?" Because public favour is so frail.

The full analysis might run thus :—"It is not credible that Milo would present himself before the people as a murderer, when looking for the Consulship, for persons fear even their best actions then as public favour is so frail." *

* See Additional Examples in Appendix, pp. 220-5.

SECTION III.

HOW TO ANALYSE A SINGLE PROOF.

N.B.—Now try to analyse one of Milner's Letters, or an extract from Cicero, etc. At this point a person might, with **great profit**, read the **first part of this little book**, and analyse some **Propositions in Euclid** after the manner described at pp. 63-68.

In fact this is **quite essential** unless a person has studied this part previously.

CICERO ON OLD AGE.

It is urged that "old age impairs the memory." This effect, I confess, it may probably have on those memories which were originally infirm or whose native vigour has not been preserved by a proper exercise. But is there any reason to suppose that Themistocles, who had so strong a memory that he knew the name of every citizen in the commonwealth, lost his retentive power as his years increased, and addressed Aristides, for instance, by the appellation of Lysimachus? For my own part, I still perfectly recollect the names, not only of all our principal citizens now living, but of their ancestors also. And I am so little apprehensive of injuring this faculty (as is vulgarly believed) by the perusal of sepulchral inscriptions that, on the contrary, I find them of singular service in recalling those persons whom death has long since removed from the world. In fact, I never heard of any veteran whose memory was so weakened by time as to forget where he had concealed his treasure. The aged, indeed, seem to be at no loss in remembering whatever is the principal object of their attention, and few there are at that period of life who cannot readily call to mind the recognisances they have entered into, or with whom they have had any pecuniary transactions. Innumerable instances of a strong memory in advanced years might be produced amongst our celebrated lawyers,

pontiffs, augurs, philosophers, for the faculties of the mind will preserve their powers in old age, unless they are suffered to lose their energy and become languid for want of due cultivation. And the truth of this observation may be confirmed, not only by those examples I have mentioned from the more active and splendid stations of the world, but from instances equally frequent to be met with in the paths of studious and retired life. Sophocles continued in extreme old age to write tragedies. As he seemed to neglect his family affairs, whilst he was wholly intent on his dramatic compositions, his sons instituted a suit against him in a court of judicature, suggesting that his understanding was impaired, and praying that he might be removed from the management of his estate, agreeably to a custom which prevails likewise in our own country, where if a father of a family, by imprudent conduct, is ruining his fortunes, the magistrate commonly interposes and takes the administration out of his hands. It is said that when the old bard appeared in court upon this occasion he desired that he might be permitted to read a play that he had lately finished, and that he held in his hand. It was his *Œdipus in Colonos*. His request being granted, after he had finished the recital, he appealed to the judges whether they could discover in his performance any symptoms of an insane mind. The result was that the court unanimously dismissed the complainants' petition.

Did length of days weaken the power of Homer, Hesiod, or Simonides, of Stesichorus, Isocrates, or Gorgias? Did old age interrupt the studies of those first and most distinguished of the Greek philosophers, Pythagoras or Democritus, Plato or Xenocrates, or, to descend into later times, did grey hairs prove an obstacle to the philosophic disputes of Zeno, Cleanthes, or that famous Stoic whom you may remember to have seen in Rome, the venerable Diogenes? On the contrary, did not all of these eminent persons persevere in their respective studies, with an unbroken spirit, to the last moment of their extended lives?

ANALYSIS OF THE ABOVE EXTRACT.

1°. The point to be proved is—

Old Age does not impair our Memory.

This he proves by Examples—

Old age did not impair the memory of Themistocles.

It has not impaired mine.

I never heard of any old man who forgot where his treasure was concealed, nor what he owed.

Innumerable lawyers, philosophers, etc., might be mentioned who had strong memories in old age.

The story of Sophocles proves the same point.

Did length of days weaken the power of Homer, Hesiod, Pythagoras, Zeno, etc. ? Did not all these persevere in their studies till the end of their extended lives ?

Now, put all this into a Syllogism thus—

Old Age does not impair Memory, if innumerable instances can be produced in which old men had very good memories.

But such is the case. Therefore, Old Age does not impair Memory.

N.B.—Do Letters five, six and eight of Milner in the same way. Also analyse **short single** arguments taken from Cicero (Milo or Old Age, etc.), or taken from Macaulay's Speeches or Essays, Burke's Speeches, Newman's, Lacordaire's, Bourdaloue's Writings, Pitt's and O'Connell's and Grattan's Speeches, Thackeray's and Lecky's Works, or from Schouppe, passages from Milton's "Paradise Lost," or Cowper's "Task," or Goldsmith's "Deserted Village," etc., etc.

SECTION IV.

HOW TO ANALYSE A NUMBER OF PROOFS, OR A POEM, SPEECH, OR BOOK.

WHATELY'S METHOD OF LOGICAL ANALYSIS.*

The student who wishes to acquire a facility in applying the rules of Logic should proceed to exercise himself in analysing logically according to the rules here given, some of Euclid's demonstrations—portions of Aristotle's Works, Adam Smith's *Wealth of Nations*, etc.

RULES.

First—Of whatever length the reasoning may be, whether treatise, chapter, or paragraph, **begin** with the **concluding** assertion—not necessarily the last sentence, but the last point established whether expressed or understood.

Secondly—Tracing **back** the reasoning, **observe** on **what ground** that assertion is made.

The first of the above-mentioned assertions will be your Conclusion—the point to be proved. The second will be your Premises or means of proving your Conclusion. The whole Syllogism thus obtained may be tried by the rules of Logic.

Thirdly—If no incorrectness appear in this

* *Logic*, p. 252. These directions, he says, are taken from the Preface to Hind's abridged Introduction to Logic.

Syllogism proceed to take the Premises separately, pursuing with each the same plan as that just stated.

NOTE.—A Premise must have been used as such either because it required no proof, or because it had been proved. If it have not been proved consider whether it be so self-evident as to have needed no proof. If it have been proved, you must regard it as a Conclusion derived from other assertions that are Premises to it ; so that the process with which you set out will be repeated, viz. :—to observe on what grounds the assertion rests, to state these as Premises, and to apply the proper rules to the Syllogism thus obtained.

Fourthly—Having satisfied yourself of the correctness of this, proceed **as before** to state its Premises, if needful, as conclusions derived from other assertions.

And thus the analysis will go on (if the whole chain of argument be correct) *till you arrive at the Premises with which **the whole commences***, which of course, should be assertions requiring no proof ; or if the chain be anywhere faulty the analysis will proceed *till you come to some proposition* either **assumed as self-evident** though **requiring proof** or incorrectly deduced from other assertions.

N.B.—It will often happen that the same assertion will have been proved by different arguments, then the inquiry into the truth of the Premises will branch out accordingly.

SECTION V.

ON THE DIFFERENT SORTS OF ABSTRACTS.

I think a person should be very careful to form for himself the habit of making three different sorts of Abstracts—one a very short one, another much more detailed, and a third a very full one.

The first sort of Abstract might merely give the general plan or outline of the work, stating, for example, the point to be proved and the means to be employed in proving it. It might, as it were, give the subject of the Sermon or Essay and the two or three great points to be treated in it. It would thus resemble somewhat a mere outline Map indicating the shape, size, and general structure of the country, giving its chief divisions as determined by the mountain ranges, rivers, lakes, principal cities, and lines of communication.

In analysing a book after this fashion you would give the great divisions of the subject—the two or three parts into which it was divided, and, perhaps, mention the chapters treating of these parts, showing how they combine to form one great whole. As an example of this method of treatment I might give a short analysis of this little treatise on Logic. I might say that “Logic was the Science of Proof—

that it pointed out when a proof was a good proof and when it was a bad one—that it did this by reducing every proof into a Syllogism, and then seeing whether this Syllogism were valid or not—that, therefore, the study of the Syllogism was the great point to which we should attend, and that in order to do this we should study carefully Propositions, as every Syllogism was made up of these. Hence we see that Propositions and Syllogisms constitute the great main divisions of Logic.”

Too frequently this short general outline of a Subject is forgotten, and so we fail to see the whole structure. Each part is studied in great detail, but we cannot form these details into a whole. As the old proverb has it: “We cannot see the wood for the trees.”

SECOND SPECIES OF ABSTRACTS.

In the second sort of Abstract we should be more detailed, and show how each of the great divisions was treated and sub-divided, and what were the points to be taken up in each. Thus, again, in the Logic, when speaking of Propositions, you would state briefly the nature of a Proposition—what were its parts—how many sorts of Propositions there were—how the Attribute of an Affirmative or Negative Proposition was taken—what was meant by Conversion of Propositions, and what were the Rules that govern it, etc.

This method of analysis would resemble a Map in which, after studying the four or five great natural divisions of the country determined by the great mountain ranges and river basins, you consider in some detail the structure of each of these main divisions, noting how they are broken up into parts by tributary streams or low-lying hills—observing where the coal and iron mines are situated, and where tillage and grazing can with most profit be pursued.

THIRD SPECIES OF ABSTRACTS.

The last species of Abstract is that in which a fairly detailed account is given of each of the subdivisions mentioned in the last paragraph.

V.G., again, in the Logic, if I take up Conversion of Propositions—I may tell what it is—how a Proposition is converted—I may give the General Rules regulating such Conversion, and also the Special Rules for Affirmative and Negative Propositions for Universals and Particulars, together with the explanations and proofs of these rules.

This species of analysis would resemble a very detailed 6-inch *Ordnance* map, in which the principal divisions of the cities and main streets are given, together with the elevations of the various places.

N.B.—It is most important to remark here that unless we **use** these Abstracts when they are made we may derive *very little benefit from them*. And

yet nothing is more common than to be guilty of this mistake. A person makes an Abstract of a book or subject with great care, and with much loss of time, and when he has finished it he leaves it aside and never makes any use of it. He should, on the contrary, go over it again and again, and be quite familiar with it, and be able to give a short or long abstract, just as he pleases, at a moment's notice. The knowledge which we cannot use in this way is only half-known.

As examples of these three sorts of Analyses I may insert here the following Abstracts of Goldsmith's "Deserted Village."

FIRST SORT OF ABSTRACT OF GOLD- SMITH'S "DESERTED VILLAGE"

(VERY BRIEF, A MERE OUTLINE).

(1.) What does the author do in this poem?

He describes the wretchedness and misery of the Deserted Village; he asks the cause of this wretchedness, and he draws a lesson from it.

This is the first brief analysis.

(2.) You may now ask what was the cause of this wretchedness, and what was the lesson to be learnt from it?

Well, the cause was the coming of the rich man, for he depopulated the country. And the lesson to

be learnt is: "To spurn the rage of gain," and "to know that states, though very poor, may still be very blest."

After this one may say this is very good, but how do you prove it to be true, or how do you find it out?

Well, by reading over the poem carefully. Then I see that in the first portion he describes the misery and decay of the village (and also its former prosperity.) "Sweet smiling village," he says, "loveliest of the lawn," "Thy sports are fled and all thy charms withdrawn," and then he bursts forth into "Ill fares the land where wealth accumulates and men decay." After this he paints again the misery and ruin of the village, as also its former prosperity, and here he introduces three most beautiful pictures of the Village Minister, the Village Schoolmaster, and the Village Inn, to heighten the effect and show how happy, innocent, and virtuous these poor people were in former times.

When this is done he asks what is the cause of this, and he answers, "The man of wealth and pride" must have space for his horses and hounds and therefore, "he spurns the cottage from the green."

"Where, then," he asks "will the poor reside?" Not in the common, not in the city, but in foreign lands. And oh, what miseries await them there. Think of these, he says, and do not condemn the poor to such wretchedness. See here the miseries entailed by greed of gain, learn to avoid it, and

learn "that states, though very poor, may still be very blest."

FIRST SORT OF ANALYSIS (SECOND STYLE).

Or, again, the analysis of the piece might proceed in quite a different manner, as follows :—

We might ask what does the author wish to do in this poem? What **end** does he wish to gain?

Well, he wants to prove that "Lust of gain is the cause of great evil, and that states of native strength possessed, though very poor, may still be very blest."

How does he prove this? He shows that before the rich man came the village was very happy—in fact, exceedingly happy, though poor—but that when the rich man came he produced misery and distress—a Deserted Village.

How does he prove that the village was happy? He describes all their joys and pastimes, and comfort and innocence and health; he introduces three most beautiful pictures of the Village Minister, the Village Schoolmaster, and the Village Inn to show how happy, innocent, and virtuous these poor people were in former times.

When this is done he goes on to enlarge on the misery which the rich man spreads, for he asks: "Where are the poor people driven to?" Not to the common, nor the city, but to foreign climes; and, oh, what miseries attend them there! He

then proceeds to describe them with great power and vividness.

How, again, it may be asked, do you know that this is the end to be gained by the poem? Well, the poet says so himself. At the very end of the poem he says:—

“Teach erring man to spurn the rage of gain;
Teach him that states of native strength
possessed,
Though very poor, may still be very blest.”

This, then, is the Proposition to be proved, and it is proved as clearly as a proposition in Euclid. All through the piece he breaks out into such expressions as these:—

“Ill fares the land,” [he says],
“Where wealth accumulates, and men decay.”
“Amidst thy bowers the tyrant’s hand is seen.”
“One only master grasps the whole domain,
And half a tillage stints thy smiling plain.”
“Trade’s unfeeling train
Usurp the land and dispossess the swain.”
“Ye statesmen,
’Tis yours to judge how wide the limits stand
Between a splendid and a happy land.”
“O Luxury! thou curst by Heaven’s decree,
How ill exchanged are things like these for
thee.”

After this first sort of analysis one might proceed to the second and third sorts as given below.

SECOND SORT OF ABSTRACT.

In the second sort of analysis you might give a fair amount of details under each of the above headings, showing how the author treated each point. For instance, I said the author began by describing the happiness and prosperity of the village before the rich man came. How did he do this?

(a) He described it as the loveliest village where smiling spring its earliest visit paid. He described all its charms, the sheltered cot, etc., all their sports and pastimes.

(b) Then he describes its desolation and misery. How does he do this? By painting the village in its desolation. All its sports and pastimes are fled, all is ruin and desolation, the long grass o'ertops the mouldering wall, and only the sound of the lapwing and the bittern are heard. "Thy glades forlorn confess the tyrant's power."

He then repeats this contrast between the past prosperity and happiness and the present desolation, and after this he proceeds to give in great detail three most beautiful pictures of the Parson, the Village Schoolmaster, and the Village Inn to show how happy and innocent and virtuous these people were in former times.

(c) And why all this desolation and misery?

Because the rich man came and cleared all the country, and "spurned the cottage from the green" to make room for his horses and hounds.

(d) And what do you get for all this misery? Wealth, which is only a name; and gold and silver ores, which leave our useful products still the same—an impoverished peasantry, fields robbed of half their growth, a land adorned for pleasure that feebly waits its fall.

(e) He appeals to the rich to think of all the miseries of these poor outcasts, and he begs of them not to be guilty of them. How does he do this? He asks where are these poor outcasts to go? "To the common?" "To the city?" "To foreign countries?"

Not to the common, the rich have seized that. Not to the city: for there they would only see the pleasures of the rich, the miseries of the poor, the pale artist who plies a sickly trade, the gloomy gibbet, the shivering, houseless poor, now lost to all their friends, their virtue fled.

They go to distant climes, but oh! what miseries meet them there? The torrid tracts, the blazing sun, the dark scorpion, the crouching tiger. This he contrasts with "the cooling brook and grassy vested green."

Then he describes the agonizing parting of the father, mother, and daughter from their home, and he winds up with a fierce denunciation of Luxury pointing out its attendant vices.

"O luxury [he says], thou curst by Heaven's
decreo,

How ill exchanged are things like these for
thee?"

How your potions cause the State to swell and
destroy and sap its strength and spread a ruin
round.

THIRD SORT OF ABSTRACT.

In it you might give for example in great detail
all the pleasures and joys in the village in its
prosperity. "The sheltered cot, the cultivated
farm"—the never-failing brook, the busy mill, the
decent church, the hawthorn bush, the spreading
tree, the dancing pair, the swain with smutted face,
the bashful virgin, the stern matron, etc.

Or again you might give a detailed description of
the Parish Minister. I remark that he describes
his house, his income, his character,—his lofty aims
"more skilled to raise the wretched than to rise"—
his home the refuge of all in sorrow and in grief,
viz., of the beggar, the spendthrift, and the old
soldier. Thus he describes him as prompt at duty's
call, alluring to brighter worlds—or as administering
comfort beside the bed of death—and lastly, he
describes him in the church or surrounded by his
flock, both young and old.

Or you might give an analysis of his description

of the Village Inn—pointing out how he describes the happy scenes in it, the parlour splendours with

"The white-washed wall, the nicely sanded floor,
The varnished clock that clicked behind the door."

The broken tea-cups wisely kept for show. And then how he mentions all the visitors—the farmer, the barber, the woodsman, the dusky smith of ponderous strength, etc.

In a similar way one might give the details of the miseries of city-life, or of exile in a foreign land, or of the cruel parting from their country.

N.B.—In a similar way one might make an analysis of one or two of Cicero's Orations, *v.g.*, *Archias and Milo* and also one or two of Newman's Essays on *Present Position of Catholics*. Of course it would be well to start with very short easy Essays first, as described above at pp. 108-114.

APPENDIX.

ON FALLACIES.

ON DEFINITION.

ON THE MEANINGS OF WORDS.

FALLACIES.

Up to the present we have spoken about good arguments. It might be well to point out now how bad arguments occur, and how to detect them.

A **Fallacy** is an **argument which seems to be good, but in reality** is not so.

There are two ways in which an argument may be bad—

- Either (1) **It may clearly violate some of the rules of Syllogisms**, when it is closely examined,
or (2) **It may not.**

LOGICAL FALLACIES.

1. **If it clearly violates some of the rules**, then it must have four terms, or two negative Premises, or two particular Premises, or the Middle Term must not be taken "generally," at least once, etc. Such Fallacies are called **Logical Fallacies**, and are easily detected by the careful application of the rules of Syllogisms. That is to say, you apply the rules of Syllogisms to them in the manner and order described in detail at page 36. First you count the

terms, then you see is the Middle Term taken generally, etc. If the argument so tested does not offend against any of the rules of Syllogisms then there is no Logical Fallacy lurking in it.

NON-LOGICAL FALLACIES.

2. If the argument does not clearly violate some of the rules of Syllogisms, then the error must creep in either :

(a) By using **ambiguous terms**,
or Words not clearly understood,
or **Propositions** that are not clearly apprehended ;

Or (b) by proving something quite different from what was to be proved,
or by assuming as true the Proposition to be proved,
or one clearly equivalent to it,
or one containing it or depending on it for its own proof.

The first class of Fallacies here mentioned is sometimes called the Class of *Semi-Logical Fallacies* ; the second Class that of *Material Fallacies*.

REMEDY FOR SEMI-LOGICAL FALLACIES.

If the error enters in by **ambiguous words**, etc.,
(a) then evidently the remedy is to clear up the

meanings of these ambiguous terms. 'This is done by Definition. Nothing is more important than the subject of Definition, and too much stress cannot be laid on it. It is the keystone of all correct reasoning, and is most difficult. But of this hereafter. I may remark, however, in passing, that this fault of not knowing the **precise meanings of words** is the most fruitful source of Fallacies. Nearly all the flaws in argument that are difficult of detection take their rise from this. Too much attention cannot be given to the matter of Definition. It is the true panacea for all false reasoning.

If one attends closely to this it is enough—all is sure to be right—but then it is exceedingly difficult to be sufficiently on one's guard in the matter. You cannot be too careful and circumspect. Only the keenest examination of every important word and the most constant and prolonged and varied practice, and the most jealous watchfulness over ourselves, can secure us from error. And all this must be combined with a profound and thorough knowledge of the subject under discussion (else some ambiguity is sure to creep in to any complicated discussion).

See Samuel Bailey's strong pronouncement on this subject given at page 91 *et seq.*

REMEDY FOR MATERIAL FALLACIES,
LOGICAL ANALYSIS.

(b) Should the Fallacy consist in proving something quite different from what one undertook to prove, then the only means of detecting and exposing this Fallacy is the constant practice of Logical Analysis. By this means you will be enabled with ease and rapidity to reduce even a long and complicated argument into a very small compass, even into a Syllogism. This is of very great importance, for, as Whately says:—

“What would not deceive a **child** if stated **briefly**, and in the shape of a Syllogism, would deceive **half the world** if **diluted into a quarto**.”

This practice will also give you the invaluable and comparatively rare habit of always asking yourself “What did your adversary want to prove?” “Was it this or that?” “Did he prove it?” “How did he prove it?” “Is the proof a good proof?” “Did he prove **all** that he undertook to prove?” etc. This will be more fully explained when I come to treat of Definition.

Many persons may be inclined to think that this caution about seeing did your adversary prove the point he undertook to prove is quite unnecessary. They will say: “Of course. Every one would do that—there is no need of a Professor of Logic

coming to tell us to do anything so obvious." They will say, "This is childish—all men do it naturally." There could not be a greater mistake. The student must have this truth inflicted on him. Only inexperience could lead him into such an error. As Cardinal Newman says of young Brown, "Not one boy in a hundred will see the point." And the same is true of older people. It is a most strange fact that when Cardinal Newman had to give an advice to the greatest preachers in Ireland at their own suggestion all he thought it necessary to say to them was—

"Have a point and keep to it."

"So much," he continued, "is contained in this simple maxim that duly to **master** it and **enter into it** is half the battle, and if you did nothing else but this you would have done all that is necessary to become a great preacher." He went so far as to recommend them "to neglect everything else besides having a point and earnestness in attaining it." (*Idea*, pp. 406-8.)

VARIOUS KINDS OF SEMI-LOGICAL FALLACIES AND THEIR REMEDIES.

To descend a little into detail, Fallacies in words may be classed as Fallacies arising from Equivocation, Amphibologia, Accent, Composition and Division, or from arguments *Secundum quid*.

EQUIVOCATION.

Equivocation consists in using the same term in different senses. The Fallacy is detected by showing clearly **the two meanings** of the word. For example, if I say—

A mouse is a monosyllable;
But a mouse eats cheese;
Therefore a monosyllable eats cheese.

Evidently in this case in the first sentence, "mouse" means the "word." In the second sentence it means the "animal."

We may say the "word" mouse is a monosyllable, but the "word" mouse does not eat cheese.

Again its argued: "All mendicants should be imprisoned; But the Sisters of Charity are mendicants; Therefore,"

Here, "mendicants" in the first case means all who beg and live by begging without doing any useful work.

The great Alabama case turned on the meaning of the phrase "to equip a ship of war."

The following may serve as illustrations of this Fallacy.

"Kings are the servants of the people, and should, therefore, do what the people wish."

"He who harms another should be punished. But the man who communicates disease to another

harmns that other. Therefore he should be punished."

"Interference with another person's business is illegal. But to undersell interferes with another's business. Therefore it is illegal."

The word "plain" applied to sermons may mean clear, simple, easily understood, requiring no learning for its comprehension—or it may mean without ornament or figures, a very different matter. It may be argued :—

"What is vicious is not *expedient* ;
But whatever conduces to wealth is
expedient ;
Therefore it is not vicious."

Or,

"Whatever is expedient is desirable ;
Something vicious is expedient ;
Therefore it is desirable."

Here "expedient" means at one time "conducive to temporal prosperity"; at another time it means "conducive to the greatest good."

"To be acquainted with the guilty is a '**presumption**' of guilt. But this man is acquainted with the guilty. Therefore we may '**presume**' he is guilty." Here we suppose "presume" and "presumption" to have the same meaning—whereas presumption implies only a slight suspicion and "presume" amounts to certainty.

From all these examples we may easily gather how frequent this Fallacy is and how difficult it is sometimes to detect it.

This Fallacy occurs frequently with two words coming from the same root as "presume" and "presumption"; "project" and "projector"; "art" and "artful"; "design" and "designing"; "faith" and "faithful"; "pity" and "pitiful," etc.

FALLACY OF AMPHIBOLOGIA.

The Fallacy of *Amphibologia*—consists in having an "**ambiguous sentence**," *v.g.*: "The Duke yet lives that Henry shall depose."

"Twice 2 and 3 = 7 or 10."

Adverbs badly placed often cause this confusion.

The remedy for this is to be very careful to see what precisely is the meaning of the sentence. An excellent practice for this is to scrutinize the meaning of some of the enunciations in Euclid as described elsewhere. (See p. 73.)

FALLACY OF COMPOSITION AND DIVISION.

The Fallacy of *Composition and Division*.—This Fallacy occurs when the same term is taken in one case *collectively* and in another case (unlawfully) it is taken *distributively*, *v.g.*: "Three and two are

five. But three and two are odd and even. Therefore five is odd and even."

In the first Proposition "Three and two" are taken together, in the second Proposition they are taken separately.

Again, "Each member of the jury may be deceived. Therefore, all may be deceived."

Whately says, p. 129: "There is no Fallacy of more frequent occurrence, or more likely to deceive than this—It is employed to establish some truths for individuals and then to conclude the same for the whole class, *v.g.*: A person observes that some great men have large heads and he jumps to the conclusion that all great men must have large heads.

The spendthrift finds that he can afford this or that expense, and he concludes that he can afford all of them.

The sickly concludes, because he can do this action or that separately with impunity, therefore he can do all of them.

Or the young man getting into dangerous habits of drink, etc., concludes that because a few cases did not beget a habit, neither will a large number do so.

A person often argues: Because I am not bound to give this man or that man an alms, therefore I am not bound to give any charity at all."

FALLACY OF ACCENT.

The *Fallacy of Accent* consists in any ambiguity arising from a misplaced emphasis or accent, *v.g.* : The prophet spoke to his sons, and said : " Saddle the ass, and they saddled him."

Or, " Thou shalt not bear false witness against thy neighbour," implying that you **may** bear false witness against others.

FALLACIA ACCIDENTIS, ETC.

Fallacia Accidentis et Fallacia a Dicto Simpliciter ad Dictum Secundum quid.—In the first, what is asserted of another thing, as to its *substance merely*, is attributed to it as to its conditions and circumstances.

V.G. : " What is bought in the market is eaten.
But raw meat is bought in the market.
Therefore, raw meat is eaten."

The second Fallacy—*Secundum quid*—consists in arguing from a general rule to a special case where a certain accidental circumstance renders the rule inapplicable, or in arguing from a special case to a general law, or in passing from a statement under certain conditions to a statement simply, or without those conditions.

MATERIAL FALLACIES (WHERE THE CONCLUSION DOES NOT FOLLOW FROM THE PREMISES).

These occur :—

1. When you do not prove what you said you would, but something like it. This is called *Irrelevant Conclusion*, or *Ignoratio Elenchi*.

2. When you *assume* as true what you said you would prove, or something equivalent to it. This is called *Petitio Principii*—"begging the question," "arguing in a circle," "a vicious circle," etc. The remedy for it is to contract the **circle** by **analysis**. A long discussion is the greatest veil for sophism. What would not deceive a child in a Syllogism would deceive half the world diluted in a quarto.

3. When you assume a false Premise.

4. When you argue from one case to another on account of the similarity between the two, although in reality there is no similarity or parallel between them. This is called *Non Causa pro Causa*, or *A non tali pro tali*, *Non vera pro vera* (*Post hoc ergo propter hoc*).

5. When you do not try to prove your point, but you appeal to the passions—*Argumentum ad verecundiam*, *Argumentum ad hominem*, etc.

Under this heading one should read *Port Royal Logic*, ch. xx., p. 266, where the author discusses at some length what are the **causes** that betray most men into error. Amongst them he enumerates

prejudice, passion, self-interest, jealousy, spirit of contradiction.

He remarks on the first of these Fallacies, Irrelevant Conclusion, that it is a very common vice. We dispute with warmth, and often without understanding one another. Passion or bad faith leads us to attribute to an adversary what he does not hold, or to impute to him consequences which we imagine may be derived from his doctrine, although he disavows and denies them. An honest man should avoid this above all things (p. 247).

DEFINITION.

A **Definition** gives the meaning of a term or mentions the essential properties of a thing.

V.G. : “ Logic is the Science of Reasoning ;” “ A Square is a rectangle having all its sides equal.” In this last example you have mentioned all the properties that a figure must possess in order to be a square, and without which it would cease to be a square. It must be a “rectangle,” and further, “its sides must be equal.”

There are two sorts of Definition, Nominal and Real.

By the Nominal Definition is meant one that merely gives the meaning of the word. It is two-fold, General and Private and Personal. A Nominal Definition is said to be General when it states the ordinary meaning of the word as used by people generally.

A Personal Nominal Definition is one in which a person takes up an ordinary word, and gives a special meaning to it.

A Real Definition is one in which you mention the essential properties of a thing.

Here it is most important to remark that there is no such thing as a true and accurate definition of some words which is correct to the exclusion of all other definitions. The fact is the words may have many different meanings all fully authorized by use, the true arbiter in such matters.

V.G.: There is no such thing as a definition of Logic, which is true and all others false. The reason is because all are not agreed as to what they will apply the term Logic to. Some will include under it a good deal about Psychology, Certitude, etc. Others will limit it to the theory of Terms, Propositions and Syllogisms.

Each has a perfect right to mean what he pleases by the term, provided only he lets us know of it. It is vain and useless to refer to derivation as if decisive on the matter. Good usage is the only arbiter in such subjects.

On this point Whately makes some excellent remarks which should ever be kept in mind. Speaking of Rhetoric he says: "To enter into an examination of all the definitions of Rhetoric would lead to *much useless verbal* controversy. It is sufficient to put the reader on his guard against the *common error* of supposing that a general term has some *real object properly corresponding* to it *independent* of our conceptions, that consequently some one definition in every case is to be found which is correct and that all the others *must* be erroneous,

whereas it will often happen that both the wider and more restricted sense of the term will be sanctioned by use, the only competent authority."

However, it should be expected of every one that he would state precisely the meaning he attaches to the term in the discussion—else people cannot understand each other.

RULES FOR A DEFINITION.

A Definition to be good should conform to certain general rules.

1. It should be clear—it should be short.

2. It ought to apply to each and every individual included under the name and to no others.

3. It ought to consist of a *genus proximum* (or lowest class), and of a **specific difference** whereby the thing defined is distinguished from all other things of the same sort.

Of course the Definition ought not to be *negative*. It ought not to tell the properties the thing has not, but those it has, *v.g.*, this is a bad definition: "A line has neither length nor breadth," for it only tells what properties a line has not.

1. By saying that a Definition should be clear, I mean that the terms in which it is expressed should be as simple and easy of comprehension as possible.

For, since the end of a Definition is to explain some matter, if it fails in this, it is useless. Nevertheless many Definitions are very faulty in this respect.

2. A Definition should be short, that is to say it should contain no **unnecessary** matter. It would be a faulty definition of a square to say that it is "a rectangle having its opposite sides equal and parallel," etc., for it is already included in the word rectangle, that "the opposite sides are equal and parallel."

3. A Definition should be such as to be true of **each** and **every individual** in the class and of **no others**. *V.g.*: It would be an incorrect definition of a parallelogram to say that it was "a rectangle," for this does not include all parallelograms. You might have a parallelogram that was not a rectangle.

On the contrary, to say of a rectangle that it was "a parallelogram" would fail in the opposite direction, for though every rectangle is a parallelogram and so the Definition applies to **all**, still there are many parallelograms that are not rectangles and so the definition does not apply to rectangles **alone**, but includes many other figures, and so is not characteristic of a rectangle.

4. A Definition should state—First, the smallest or lowest *class* to which a thing belongs.

V.G.: "A square" is a rectangle, having all its

sides equal. Here "rectangle" is the smallest or lowest class to which you can refer a square. If you said that a square was a four-sided figure, that would not do, for it might then be a parallelogram or a rhombus or a rectangle, etc. But when you say it is a rectangle, then you put it into the smallest class, and all that is required is to find some property which it possesses that will distinguish it from all other rectangles, and that is "the equality of all its sides." This last quality which distinguishes a square from all other rectangles is called the Specific Difference or the *differentia maxime propria*.

N.B.—It would be well here to test **many** of the definitions of Euclid, Logic, Arithmetic and Natural Philosophy.

V.G. : Define parallelogram, rectangle, parallel lines, ratio, a fraction, proportion—term, syllogism, conversion.

NOTE.

It should be particularly observed that there are many words which cannot be defined at all. The names of simple ideas as colours, tastes, etc., cannot be defined. This is clear, for if a thing has no parts you cannot enumerate its parts.

Neglect of this simple truth has led to much confusion, persons trying to define everything, and thus

giving rise to much wrangling and absurdity. If all things were definable, this would lead to a process *ad infinitum*, and you never could define anything. For if you began to define anything then you should define each word in that definition, and after this each word in each of these definitions, and so *ad infinitum*. We must, at last, come to ideas that are so clear and simple that they require no explanation, else we should keep on explaining terms for ever and so never explain anything.

As examples of the absurdities into which the non-observance of this caution leads, we may quote the following:—"What more exquisite jargon than this definition? 'The act of being in power as far forth as in power.' It would puzzle any man to know what it is the explanation of—or what its meaning is."

Again, some say **motion** is a "**passage** from one place to another." But what is a passage but motion, so you say "motion is motion."

The reason why simple ideas cannot be defined is because the simple ideas are got only from the impressions of the objects themselves. Words can never produce them. No words can ever give the taste of a pine-apple to one who never experienced that taste. To expect to produce the sensation of red by a sound is to expect to become like Sancho Panza, who could *see* Dulcinea by *hearsay*.

A very clever blind man, after much study of

books, etc., thought he had arrived at a knowledge of what scarlet was like, and when questioned on the matter by a friend he exclaimed, in triumph, that he thought "Scarlet was like the sound of a trumpet."

HOW TO FORM A DEFINITION OR ARRIVE AT THE MEANING OF A WORD.

How to frame a definition of a word or arrive at the true definition of a thing, is sometimes a most difficult, though a most important matter. Most writers on Logic do not treat this subject at all, and very few, if any, attach to it its due importance. The following rules taken in substance from Bain's *Logic*, vol. ii., p. 156, *et seq.*, are fairly good for ordinary cases.

To find out the precise meaning of such a word as "rose," "food," etc., proceed as follows:—

1. Collect all the various things to which the name is applied.
2. See that the specimens be as different or as unlike as possible.
3. Compare all these together.
4. Note what qualities and properties they all have in common.

5. Express these common properties in words and you have a correct definition.

V.G., to define "rose." Collect all the flowers to which the term "rose" is applied; see that you have got the most widely different flowers that are called by that name; ask yourself are there not other flowers still that are called roses, or might be called roses as "Scotch Roses," etc. When this is done compare them all together; notice in what they agree; see what they have in common. Express this in words and you have a Definition of a "rose."

Again, suppose we had to define "food." Proceed in this fashion. First, collect all the substances that are invariably recognised as "food" by *all* people, *v.g.*, flesh, fish, milk, butter, bread, vegetables, fruits, leaves, water, wine, salt, etc.

If a man took only flesh for "food," "food" might then be defined, etc., as "**flesh** taken into the mouth, passed into the stomach, there digested and applied to nutrition."

But since vegetable and mineral bodies appear in the list of those substances that all regard as "food," we must extend our definition and say "Food is any animal, vegetable or mineral substance taken into the mouth," etc.

Still this is only *tentative*, we must **now compare our definition with facts** and **see does it include each and every substance that all men regard strictly as "food."** On examination we observe

that certain substances absorbed by the skin are called "foods," and so we are compelled to omit from our definition the phrase "taken into the mouth." Lastly, it may be doubted whether tea, alcohol, and tobacco *nourish*. If these nourish, then we may allow our definition to stand as it is. If they do not nourish, then we must either change the definition so as to include these, or we must strike them off from the list of "foods," and retain our definition.

2ND RULE.—Collect and compare with your definition many cases of the opposite, *v.g.*, to define *straightness*, get a series of straight objects and place beside them a series of *bent* and *curved* ones. See in what they agree and how they disagree, etc.

Again, to define *solid*; collect many solids and also many liquids and gases, and see in what solids all agree, and wherein they differ from liquids, etc.

NOTE.—The Rule is to collect examples and see in what they agree and in what they disagree, etc.

This is very often an excellent method of finding out the correct definition of a word, etc., but it will not hold in all cases. It seems to be based on a false principle, *viz.*, that all men mean the same thing by the same word. This may not be at all true and may be most misleading in practice. It may hold very well when you have to define a *thing* such as a "rose," and can collect together all the flowers that are called "roses" and see in what

they agree, etc. ; or even in the case of such a word as "food," "acid" ; but it seems to fail completely when you undertake to define an impalpable thing, a mere abstract thing or notion, a mere bundle of ideas, to which a name is applied, as Education, History, or any complex notion. *V.g.*, if I want to get the definition of Education, Music, Poetry, etc., it would not do to look round and see all the things that are called Poetry or Music, and see what they have in common, and put this into words, and call it Poetry, etc. No ; nothing would remain. Different men mean different things by Music, and their statements could never be brought into agreement. They are at opposite poles. They could never be reduced to any common denomination. *V.g.*, in Music some may maintain, as Gluck, Beethoven, and Wagner, that you have some most definite scenes and ideas before your mind, and that you want to express these and excite the emotions appropriate to them by means of your art. Others disclaim any such definite ideas. They maintain that Music is incapable of such. They say (though admittedly great composers themselves), that they never had any such ideas in their works. They say that their only aim in all they wrote was to excite pleasurable sensations in the minds of those that heard them by the instrumentality of sweet and harmonious sounds, etc. How can such discordant views be ever united in a common definition ? What

have they in *common* when they seem diametrically opposed to one another?

Quite similar observations may be made with regard to History.

WHAT A PERSON OUGHT TO DO IN ORDER TO ARRIVE
AT A TRUE DEFINITION OF A THING.

V.G.: Define Sacrifice, History, Music, Poetry. To do this—(a) Read up *all* the best authorities on the point. See if they give a definition of the subject; if so, see if they all agreed at least in the essential points. If not, see in what they differ. Take down the various definitions and compare them. Each may throw a good deal of light on the subject, and all may be regarded as different views obtained of the same subject when looked at from various stand-points, or as definitions of really different objects.

If the author does not give a definition of the subject try to make out the meaning he attaches to it from various parts of his works, from the context, incidental expressions, parallel passages, etc.

(b) When you have thus collected all the various definitions, and seen all the senses in which the word may be used, proceed to classify these definitions. Note if the various definitions can be divided off into groups. See if some of the definitions have anything in common.

(c) When the definitions are so divided off into groups examine each opinion carefully. See will it bear the test of the most rigorous careful criticism. Reject what is clearly false in each opinion. Note what is true and lay this by for use in your final definition. When examining each definition ask yourself would the subject so described and so understood **gain its end**. Be **very strong on this**. See if **all** the authors aim at the **same end**.

(d) After this try to formulate a definition for yourself. For this purpose **settle above all things the end to be gained**. Is it this, or this, etc.? **Too much stress cannot be laid on this**. And then keep constantly watching and observing your definition to see does it embody all. It may take a very long time, even as much as a year or two, examining and rejecting various ends to be gained until you have hit on the right one, *v.g.*: If one wanted to know "What is the end to be gained in studying Classics, Mathematics, Natural Philosophy, Education?" But **once this is settled all the rest flows of necessity**. Without this everything is mere talk.

(e) To aid in arriving at the final definition, one might try to formulate as accurately as possible the various opinions generally in use, and then **try to refute each**, admitting whatever is good in it.

For example, if a person wished to arrive at a

proper definition of Education, he might sum up the opinions most in vogue by saying, "Some persons think that Education is information, others that it is a knowledge of the Classics, others of Mathematics, or Natural Philosophy." Then you might take up each of these opinions separately, and show first that Education is not merely information, else it would be as good to have the information in a large number of books carried about in a donkey cart. Neither does it consist in a knowledge of Classics merely, nor in the power to express our thoughts. We also want to think correctly. We want, therefore, Mathematics. We want to think and to express our thoughts, and as Mill says—"Is not any one a poor, maimed, lop-sided fragment of humanity who is deficient in either."

(f) Having thus **exploded the various hypothesis**, having seen that we want to think and express our thoughts, we are in a better position to try to form a correct definition for ourselves. **We begin to ask ourselves what really is the end to be gained in Education.** Do we not want to get the power to reason and think correctly—to conceive accurately—to express our thoughts with clearness and with force—do we not want a cultivated taste? Here, then, we see the ends we want to gain: "Accurate thought, discriminating judgment, clear, forcible expression and a cultivated taste." We see, then, that in teaching the teacher has to do for his pupil

just what the singing master does for his. His first concern should be to give his pupil a good instrument, and then teach him how to play on it.

As the Singing Master should try to make his pupil's voice soft, rich, sweet, of good compass, brilliant in tone, etc., and then should teach him how to use it, so should the teacher secure for his pupil a good mind, and then show him how to use it on various subjects. He should cultivate his reasoning power, his taste, his accuracy, and his power of expression. He should cultivate to the highest all his faculties, and then show him how to use them.

To sum up all this in a few words, we might say, "If you want to frame a true definition make various hypotheses as above and reject them in turn." This is excellently done in Plato when he takes up "justice" and "wisdom," and tries to define them.

Nowhere can the theory and practice of Definition be better studied or more clearly understood than in his books. See Examples from Plato at end of this section. (Page 177 *et seq.*)

Again, **suppose various ends** that persons might think should be gained by these subjects and show that the ends are **useless**, or **impossible**, or **never gained by the vast majority**.

V.G.: "Why do we study Latin and Greek?" Some say, "We study Latin and Greek that we may know these languages." Is this true? If so, **do we want to know them? do we ever want to**

write or speak them ? and, if we did, how many would be able to do so ?

Finally, to arrive at a true definition ; **settle very thoroughly** with yourself **what is the end to be gained ; see if there is not more than one end desirable.** May there not be different reasons for different people at different times, *v.g.* : “ Why study History ? ” May there not be one reason for the young and another for the mature, etc.

Having thus cleared away all difficulties, and seen precisely the end you want to gain, see does the definition secure the attainment of this end.

N.B.—It is quite wrong to do as is most frequently done, start off with a definition of your subject as if that definition were quite clear and certain without examining that definition or proving its truth or seeing if others hold it. To act after this fashion is a mere begging of the question. All is involved in the definition. *V.g.*, it is quite unfair to lay down your definition of “ a sacrifice,” and then work on it as if it were admitted by all. What one should do is : he should collect together all the things that are called “ sacrifices ” **by all** ; he should see what they have in common ; he should examine whether the word is not often used loosely ; he should see is there a more special meaning on which all are agreed ; he should ask himself **what is really necessary for a sacrifice ; what is the end to be gained by a sacrifice ; does this gain that end ?**

In what sense was the word sacrifice used in the decree, etc.

If a word is used by an author, etc., we might inquire—

- (a) In what sense does the author use this word? Find this out from his works.
- (b) What is the meaning attributed to the word by the generality of men?
- (c) Is there any one meaning invariably attached to it, or is it not used by different people in different senses?
- (d) Oftentimes a man gives a most elaborate definition of a word, and he seems to have attached the proper meaning to it, but you cannot be sure of this. Frequently you find he has not grasped the meaning fully at all; he merely repeated the words; he does not follow it; **it does not guide and direct all his reasoning.** Constantly examine carefully and see if the author is keeping to his principles. Most authors fail in this. Even Mill, after giving a splendid description of Education, seems to forget it after a few pages. Fully to grasp the definition and to master it is half the battle. If we know why for what end we study Classics, then this will guide us as to the amount we should study, the method we should pursue, etc.
- (e) In giving a definition it is best to explain

fully the sense in which you use the word. Say I do not mean this, or this, but I mean this. Illustrate your meaning **by many examples**, as in the case of Education, **by carpenter and singing master**. Tell the **end or ends** to be gained. Mention **other** significations ; **show** these do not gain the end..

ON THE IMPORTANCE AND DIFFICULTY OF KNOWING THE MEANINGS OF WORDS AND PROPOSITIONS.

Speaking on this subject Mill says—"Those who have seriously reflected on the causes of human error have been deeply impressed with the tendency of mankind to mistake *words* for *things*."

"We know how common it is to use words glibly and with apparent propriety, and to accept them confidently when used by others without ever having had any distinct conception of the things denoted by them."

"When our ears are accustomed to the sound of a word or phrase we do not suspect that it conveys no clear idea to our minds, and that we shall have the utmost difficulty in defining it or in expressing in other words what we think we understand by it. *Even Plato and Aristotle are constantly led away by words, supposing that things that have the same*

name in Greek must be the same in their own essence.

“There is a well-known saying of Hobbes the far-reaching significance of which you will more and more appreciate in proportion to the growth of your intellect to the effect that ‘Words are the counters of wise men but the money of fools.’” (*Inaugural Address*, p. 12.)

Cardinal Newman says—“Consider how many disputes are interminable because neither person understood his opponent nor himself. ‘Is a Constitutional Government better for a population than an absolute rule?’ What a number of points must be clearly apprehended before we are in a position to say one word on such a question. What is meant by ‘constitution’? by ‘constitutional government’? by ‘better’? by a ‘population’? by ‘absolute rule’? A person who knows his ignorance will say, ‘These points are beyond me,’ and he tries to get a clear notion and a firm hold of them. Others will have no hesitation in undertaking any subject, and perhaps have most to say on questions that are new to them.” (*Idea of a University*, p. 498.)

“I say one main part of intellectual education is to give the mind clearness, accuracy, precision, to enable it to use words aright, to understand what it says, to conceive justly what it thinks about. Logic takes this up. *Instruction, if it be really*

instruction, is mainly a discipline in accuracy of mind.

“ Boys are always more or less inaccurate, and the **majority** remain boys all their lives. When I hear speakers declaim about ‘Freedom of Conscience,’ ‘the Gospel,’ ‘large and enlightened views’ I am far from denying that **some** amongst them **know what they are talking about, but it would be satisfactory in a particular case to be sure of the fact**; for it seems to me that these household words may stand in a man’s mind for a something or other very glorious indeed but very misty, pretty much like the idea of ‘civilization’ which floats before the mental vision of a Turk—that is, if, when he interrupts his smoking he condescends to reflect whether it has any meaning at all.

“Haziness of intellect is the malady of all, of those who read and write and compose quite as well as of those who cannot—of all who have not had a REALLY GOOD Education.” (*Idea, etc.*, p. 332.)

“What is more common than the sight of grown men talking on political, or moral, or religious subjects in that offhand, idle way, which we signify by the word unreal. ‘That they simply do not know what they are talking about,’ is the spontaneous silent remark of any man of sense who hears them.

“ They never see the point, and have no difficulties

in the most difficult subjects." (*Idea, etc.*, Preface, p. xvii.)

Whately is so impressed with the importance of the subject of the Meaning of Words that he devotes about fifty pages of his *Treatise on Logic* to a Dictionary of some "Words liable to be used ambiguously." He says—"It appeared to me desirable to illustrate the importance of attending to the ambiguity of terms by a larger number of examples." He then proceeds to give a long list of such words. Among these he has seven terms taken from Political Economy, which are particularly well explained and highly instructive. They are the terms *Value, Wealth, Labour, Capital, Rent, Wages, Profits*. He says if these terms were strictly defined we might almost expect as much agreement amongst Economists as amongst Mathematicians. As a matter of fact these terms are not accurately defined, and so there is endless confusion.

He then takes up the term **Value**. He says we might expect all Economists to be agreed on the meaning of this term, and yet there is no subject on which they are less agreed. He then quotes the various definitions given by different men—he shows how these definitions are contradictory, and, further, that the authors scarcely ever adhere to the definitions they may give.

Speaking of Adam Smith's definition, he remarks—
“He soon proceeds on another definition, and shows that he affixed, or thought he had affixed, some other meaning to the word; as the first of his propositions is contradictory, and the second false, whichever of his two definitions we adopt.”

Of Ricardo he says—“He uses the word Value as synonymous with Cost, and by this one ambiguity has rendered his great work a long enigma.” (P. 230.)

Speaking of Wealth, he says—“It were well if the ambiguities of this word had done no more than puzzle philosophers. One of them gave birth to the mercantile system.” (P. 232.)

Whately adds—“It is worth observing that the words whose ambiguity is most frequently overlooked, and is productive of the greatest confusion, are amongst the commonest, and are those of whose meaning the generality consider there is the least room for doubt.” Hence danger arises.

“Words in very common use are most liable, from looseness of ordinary discourse, to slide from one sense to another. Familiar acquaintance is perpetually mistaken for accurate knowledge.” (P. 192.)

On this point one might read with great profit Balmez' examination of the meaning of Toleration

in his *European Civilization, or Protestantism and Catholicity Compared*, chap. xxxv. Read also Mill's examination of the various definitions of Logic—(*Logic*, chap. i.)—but particularly Plato's discussion of the meaning of Courage, Goodness, Rhetoric, etc. Very much might be learned from this as to the true method of arriving at the meaning of the word. Plato's attempts at arriving at the true meanings of these words are given at page 177 *et seq.*

Mill, in his *Inaugural Address* says—"Human invention has *never* produced anything so valuable in the way both of stimulation and of discipline to the inquiring intellect as the dialects of the ancients, of which many of the works of Aristotle illustrate the theory and those of Plato exhibit the practice. No modern writer comes *near* to them in teaching both by precept and example, the way to investigate truth. They taught to question all things ; never to turn away from a difficulty ; to accept no doctrine either from ourselves or other people without a rigid scrutiny by negative criticism, letting no fallacy or incoherence or confusion of thought slip by unperceived ; ABOVE ALL to insist upon having the meaning of a word clearly understood before using it, and the meaning of a proposition before assenting to it." (P. 16.)

“In Plato’s *Republic*—one of the noblest examples of method—successive definitions of ‘Justice’ are brought and rejected. Division predominates in the enumeration of the powers of the human soul and of the classes in a state that answer to them. It is the finest work of pagan philosophy. In the *Nicomachean Ethics* of Aristotle definition predominates, but it derives considerable aid from division.” (Thompson’s *Outlines of Thought*, p. 276.)

Deeply impressed by the truth of these sayings from Mill, I have thought it most important to insert here a few specimens of Plato’s method of finding out the meaning of a Word—especially as such specimens may not be within easy reach of some of my readers.

A BRIEF EXAMPLE OF THE MANNER IN WHICH
PLATO EXAMINES WHAT ONE IS GOING TO DO
OR TO PROVE (TAKEN FROM “PROTAGORAS”).

In the *Protagoras* Hippocrates comes to Socrates, and asks him to go with him to see Protagoras.

Socrates inquired: “What do you take Protagoras to be, and what are you to become? If you go to the great physician of Cos, and pay him money to teach you, and if anyone were to ask you: ‘Why do you go to him—as being what?’ you would say as being a physician. If you go to Phidias, and

anyone ask you why, you say to learn sculpture ; and if one ask you why you go to Protagoras—as being what?—you must say as being a Sophist. Are you, then, going to become a Sophist? Would you not be ashamed to be called so?”

“In truth I should,” replies Hippocrates.

“But,” continues Socrates, “you do not mean that this should be the result of your learning from Protagoras. You mean it should be part of your education, like music or gymnastics. Each of these is learned, not as a profession, but as a discipline, as a liberally-educated man should learn them.”

“That is so,” replied Hippocrates.

“But,” said Socrates, “do you know what you are going to do? You are going to commit your soul into the hands of a Sophist. But what is a Sophist?”

“I think he is a man that knows wise things.”

“But so is a portrait painter or an architect ; and if anyone ask in what is a portrait painter wise, we should say in drawing likenesses. Now, in what things is a Sophist wise?”

“He makes men good speakers,” replies Hippocrates.

“But on what subjects?” urges Socrates. “The Musician makes good speakers on Music. About what does the Sophist make men good speakers?”

“In truth I cannot tell.”

“Do you know to what danger you are going to expose your soul? If you had to risk your body

into the hands of someone, you would make careful inquiries about his skill and knowledge ; but when there is question of your soul, you do not take counsel of anyone."

"Is not Hippocrates a Sophist, a vendor of articles on which the soul is fed?" "Yes." "Now the soul is fed on the lessons of teachers, and we must take care that the Sophist does not cheat us in selling his wares as other vendors do. For they, without knowing what is good for the body, praise all their wares alike, and the buyer knows nothing. So may it be with the Sophist, and they may not know what is good for the soul, unless they are soul-physicians.

"If you are a judge you may buy ; if not, beware. There is more danger in buying lessons than in buying victuals. You can try the victuals ; you must let the lessons into your mind, whether good or bad."

After this conversation they go to the house in which Protagoras was staying, and being seated, they ask Protagoras, "What will happen if we attend you habitually?" He replies : "You will improve each day." "Good. But in **what** shall we improve? If we go to Zeuxippus we improve in Painting. If to Orthagoras, in Music. In **what** will you improve us?" "If you come to me you will learn prudence in domestic affairs—how you may best manage a house, and skill in political affairs."

"You promise then to make good politicians?"
"Quite so." "But I fear you cannot do this. The Athenians and other Greeks are wise. Now, if they have in their public assemblies to decide a question about house-building, they consult an architect; if about ship-building, they consult a shipwright. If anyone not skilled in these arts speaks they pull him down.

"About matters which belong to a special craft this is the course they take; but when the general policy of the State is to be discussed, anyone may speak of it—tinker, tanner, shopkeeper, sailor, etc., and nobody is surprised—which shows they think politics cannot be taught. Even the greatest politicians, Pericles, etc., never attempted to teach their children politics. If, then, politics can be taught, make this clear to us."

PLATO ON THE DEFINITION OF COURAGE (LACHES).

"What is Courage? That is easy to answer. If a man is steady in the ranks, and beats off the enemy, he is brave."

"Yes; but there are combatants who run and still fight bravely, as witness the horse-soldiers."

"Some manifest Courage against pains, pleasures, desires, fears. What is the quality that is the same in all these instances. (There is such a quality as Velocity—a man may run quickly, play the lyre

quickly, speak quickly, learn quickly. What then is Quickness or Velocity? It is the power of doing much in a short time.) ”

The person responding then says,

“ Courage is a certain Strength of Mind.”

“ Strength joined with Wisdom is excellent—joined with Folly, it is dangerous. Therefore, ‘Strength merely cannot be the excellent thing Courage always is.’ ”

Then “ Courage is Strength of Mind with Prudence.” “ But what sort of Prudence ? ”

“ If a man have Strength of Mind to give money prudently, knowing he will get more in return ; do you call him Courageous ? ”

“ Or if a Physician has Strength of Mind to refuse a patient what is bad for him, do you call him Courageous ? ”

“ Or in war, if a man keeps his place when well supported, is he braver than the man that resists him ? No ; the man that resists is braver, but he is less prudent.”

“ If a horse-soldier who is a skilful rider fights boldly, do you say he is braver than one who has not that skill, but fights ? ”

“ Or, if a man jump into a pond who cannot swim, is he braver than one who can ? Here we have Boldness without Prudence, Strength without Wisdom, and that is not the excellent thing that Courage is.”

Evidently, we have not yet hit on the definition.

So he proceeds. He asks Nicias, "What is Courage?" Nicias replies, "I often heard you say all virtue is a kind of knowledge." "Yes. Good. But what kind of knowledge? Is it knowledge of Flute-playing or Harp-playing, etc? No. What kind is it then?"

He replies, "Knowledge of what is safe and what is dangerous." "Then, according to you, animals have not Courage, for they have no reason. Or, if you say they have Courage, then the lion and tiger have reason. All allow these animals are courageous; are they wiser than men? Or do you contradict all men and say they are not courageous?"

"I do not call animals courageous," replies Nicias. "I call them fearless and foolish. Do I call infants courageous, who fear nothing? Fearlessness and Courage are not the same thing."

And so he continues to the end of the Dialogue.

PLATO DISCUSSES THE DEFINITION OF GOODNESS (SOPHROSUNE) (FROM CHARMIDES).

Charmides wishes to be cured of a headache. Socrates tells him we must cure the mind first and then the body. He tells him the soul is cured by certain charms, and these charms are the wise and good sayings of men. By them the soul gets wisdom and goodness.

He then asks Charmides what is this Goodness. "If you are good as people say," he continues, "you have no occasion for charms." "Have you this goodness?" Charmides replies. "It is not becoming for me to say 'Yes' or 'No.'"

"May I then examine to see if you have this Goodness?" "Certainly." "If you have it you will be able to tell what it is like, for it must leave some feeling of itself."

"What then is this Goodness?" "I think it is doing everything in an orderly and quiet way, whether walking in the street or talking, etc. It seems to me a sort of quietness." (He defines Goodness in the sense in which a child is good—when he makes no noise and does not murmur, but acts in an orderly manner.)

"Is this definition correct?" Socrates asks. "Let us see. Goodness is a good thing?" "Yes." "Now, if we write equally well, is it better to write fast or slow?" "Fast." "And so in reading, boxing, running, quickness and not slowness is best. Quickness in learning, in recollecting, in guessing, in understanding, in giving counsel, is best. Therefore this Goodness, which is always desirable, is not slowness."

Charmides now tries another definition. He says: "Goodness is the quality which makes a man bashful and ashamed of himself. It is Modesty." "How can this be? Goodness is always desirable?"

"Yes." "Now, Homer says of Modesty, it is not good for a man that is needy and craving. Thus Goodness is not Modesty."

Again Charmides makes an effort to give a definition. "Goodness," he says, "is doing what belongs to oneself—doing one's own work."

"You do not mean this," replies Socrates. "Has the schoolmaster when he writes or reads no Goodness? Now, does he read and write only his own name? And does he teach his boys to do the like. Building, weaving, etc., is a sort of doing. And do you think that it would be a good law for a city that would require all citizens to do the things which belong to themselves. Should every man make his own coat and shoes, and should nobody make them for other people? What may this mean?"

"I do not know, but perhaps even he who said it first did not know."

Critias then interposed. "I hold this definition," he said. "You do well," returned Socrates. "But do you admit that all artizans make things?" "I do." "And do they make their own things only or things for others also?" "For others also." "Are they good men? Have they Goodness?" "Yes." "Then those that make other people's things are good." "Things that are ignoble are not our business. I mean by 'one's own things' **good things**." "Goodness then is doing good things?" "Yes." (Here we see Critias undertook to define Goodness

as a special quality, and he ends by defining general goodness.)

But Socrates continues ; " Goodness must involve knowledge as well as Goodness." " Yes." " Know thyself is an accurate definition of Goodness—that is, Be wise."

" Do you agree that ' Goodness is knowing one's self ? ' " Critias asks. Socrates says ; " I am considering. I do not know. If Goodness be knowing something it must be a kind of science." " Yes—it is the science of one's self." " Let us look at the arts and sciences, they each produce some work. The Science of Medicine produces health—the Science of Architecture produces houses. Now what does the science that you call Goodness produce ? " Critias replies : " All sciences do not produce works. Arithmetic and Geometry do not produce works as Architecture produces houses." Socrates admits this, but he says : " I can tell you of what each of these is a knowledge. Arithmetic is the knowledge of Numbers, etc. Now, of what is Goodness the knowledge ? " " It is the Science of Sciences."

" Is this possible. What is the meaning of it ? Can there be such a thing ? We have a faculty of vision, but we have not a faculty which sees this faculty. We have a faculty of hearing, but not a Hearing of Hearing. We have a Desire of Pleasure, but not a Desire of Desire." (Then he becomes very abstruse.) He ends by asking : " Is Goodness a

Knowledge of Knowledge? Show first that such Knowledge is possible, and then that it is valuable."

Critias, though puzzled, says: "Plato did not wish to appear so before the company, and would not confess it, but talked vaguely to conceal his ignorance."

"This Knowledge of Knowledge," says Socrates, "is to tell you whether a man have knowledge or not, but have knowledge of **what**? Of Medicine? But no knowledge can tell that except a knowledge of Medicine. Test the imposter by a case of disease, not by a Knowledge of Knowledge."

Socrates says: "You hold that Knowledge is the end of life? Knowledge of what? Of Shoemaking? Of Brassfounding? No. Not of every kind then? No. A knowledge of present or past or future? Which of these makes him happy? Do all alike? No. Then which most? Chess-playing? Nonsense. Arithmetic? No. Knowledge of what is good. Why not say that at once? It is not living according to Knowledge makes us happy, but according to the knowledge of good and evil. All other knowledge is of small use."

PLATO'S SEARCH FOR A DEFINITION OF RHETORIC (FROM GORGIAS).

Gorgias was a celebrated ambassador-orator. Socrates meets him with some friends.

"What shall I ask him?" says one of them to Socrates. Socrates: "What he is? You know if a man makes shoes we call him a shoemaker."

"If Gorgias were master of his brother's art what should we call him?" "A Physician."

"And if he were skilled like Aristophon?" "An animal-painter."

"When asked what art Gorgias is skilled in you begin to praise his art as if any one had blamed it but you do not answer what it is."

"Did I not say it was the most excellent of arts?" "Yes. But nobody asked what was the quality of Georgias' art, but what art it was. What art do you profess, Gorgias?"

"Rhetoric."

"Then we are to call you a Rhetorician or Speaker?" "Yes." "And you can make others such as you are?" "Yes." "Now what things is Rhetoric engaged about? Thus Weaving is engaged about making clothes, and Music about making tunes?" "Yes."

"What is Rhetoric employed about?" "About words." "About what words?" "About the words which tell the sick how to get well?" "No." "Not about all words then?" "No."

"You make men able to speak?" "Yes." "Then, of course, **to think** about the things about which they speak?" "Of course." "The art of Medicine makes men able to speak and think about sick

people?" "Yes." "Then Medicine is concerned about words?" "Yes—about words that describe diseases." "And Gymnastics treats of words in like manner?" "Yes." "And so of every art." "Decidedly." "Since these arts are concerned with words why not call them Rhetoric?" "Because these refer to manual arts. Rhetoric is concerned only with words."

"But what of Arithmetic and Geometry? Would you call these Rhetoric?" "No."

"Complete then the definition. If one asks me what is Arithmetic, I should say: One of the arts which work by words. And if he should ask words about what? I should say, words about numbers. So also of Astronomy. About what are the words of Rhetoric?" "They refer to the most important things." "But what are the most important things—Some say Health, others Wealth, others Beauty, etc." "The good thing in question gives freedom and political power." "But what is it?" "It is the Art of Persuading in the Court of Justice or in any meeting." "And by it you may make the Physician, the Gymnast—all become your servants."

Socrates replies—"Now I understand. Rhetoric is the Art of Persuading." "Quite so."

Socrates then proceeds—"Other arts give us Knowledge: Arithmetic gives us knowledge about Numbers. Is not this persuading us of certain

truth. Is not Arithmetic then the Art of Persuading or Rhetoric. And so of other arts."

Gorgias answers—"Rhetoric is the Art of Persuading in judicial bodies and other assemblies."

"There is true and false opinion, but not true and false Knowledge. Rhetoric can only produce opinion not Knowledge. How should it in so short a time as that of a speech supply the Knowledge of right and wrong? How can Rhetoric supply the place of Knowledge? If the assembly wish to choose a Physician or a Ship-builder do they not need a Knowledge of Medicine or of Ship-building to make a right choice? Does your Rhetoric help your pupils to speak on such subjects or only on right and wrong in general." Gorgias replies that even on such subjects the Rhetorician can converse. In this way Themistocles and Pericles were authors of the docks and walls of Athens, etc.

Socrates proceeds—"You say the Orator will, on sanitary points, persuade better than the Physician; not teach or convey real Knowledge but persuade. But whom will he persuade? The ignorant, plainly. Rhetoric is a mechanism for making a man who is ignorant appear to the ignorant to Know."

"And is not this a very great thing?" asks Gorgias. "Whether it be a great thing we shall see by-and-by. But it is so also with regard to right and wrong, good and bad? Is the Orator really ignorant of what these are, and has he

only a mechanism which makes him seem to know. When young men come to you to be taught is this Knowledge of right and wrong foreign to your business, must they know it before they come or learn it from you?" "Georgias admits this Knowledge is necessary."

A BRIEF SUMMARY OF A PORTION OF PLATO'S APOLOGY.

Socrates is accused of corrupting youth because he has proved that most men do not know what they are talking about.

Some may ask what is the real charge against Socrates, and how did it arise? It arose thus:

"Chærephon, who is most earnest in all he does, asked the Oracle at Delphi: 'If anyone were wiser than I was?' Do not be offended,¹ judges. I must speak the truth. The Pythoness answered. 'No.'"

"I said what can this mean, for I am not conscious to myself of any wisdom great or small. Yet it must be true, the Oracle says so."

"I, therefore, went to one of the wisest statesmen, 'Here, I said, is one wiser than I am.' I questioned him. He was accounted wise by many and especially by himself. I attempted to show him he was not wise, though he thought he was, and so I became odious to him and to his followers. I then

said to myself, 'I am wiser than this man. Neither of us knows what is right and good. He thinks he knows it. I am sure I do not. In this I am wiser than he is. I know my own ignorance—he does not know his.' I then went on to examine others in a similar manner. I found that those who had the greatest reputation seemed to me, thus inquiring, to be most deficient. After the Politicians I went to the Poets, Tragedians, etc. I took then their poems and asked them what they meant. I am ashamed to say how it turned out, but I must speak the truth. In almost all cases the others present were better able to tell the meaning than the poets themselves. So I soon came to the conclusion that the Poets did not make their poems by wisdom, but by a sort of inspiration, like the Oracles which utter many wonderful things without knowing what they mean. The Poets seem in like case; but still in consequence of their poems they were thought wiser than other men, though they were not so."

"At last I went to the artisans. Here I knew nothing, and they knew many beautiful Arts. And so it was. But they seemed to have the same defects as the Poets, for since they were wise in their own Art they deemed themselves very wise in other things of gravest moment, and this conceit spoiled their wisdom. So I asked myself whether I had rather be as I was, not possessing their knowledge and not having their ignorance, or to have

both as they had, and I answered it was better to be as I was."

"The young men who fall into my company are delighted with these questionings, and even try to question others themselves. The result is they find **a great abundance of persons who think they know something, but who really know little or nothing**"

"These are displeased, and so they accuse me of corrupting the youth. The truth is they are convicted of pretending to know what they really do not know. They are jealous of their reputation, and so they accuse me. Meletus is urged on by the resentment of the Poets, Anytus by the Artists, and Lycon by the Orators."

"I am accused of corrupting the youth, denying the gods whom the State acknowledges, and of introducing new ones."

"Meletus says I am guilty of corrupting the young men. I say he is guilty of trifling with serious subjects, and of bringing grave charges against men, pretending to care for things for which he cares nothing. I will prove this."

"Stand up, Meletus, and tell me: Is there anything you have so much at heart as to make our young men good men?"

"That is my desire."

"Now tell these Judges who makes young men good. Of course you know, for it is your business.

You have found out, it seems, who makes them worse, for that is what you accuse me of. Now, who makes them better?"

"You are silent, and have nothing to say. Is not this a scandal, and does it not show you have given no attention to such matters. Now, who makes young men better?"

"The Laws."

"That is not what I ask, my excellent sir, I ask Who? Of course he must begin by knowing the Laws."

"These Judges."

"How? Do these Judges teach our young men and make them better?"

"Certainly."

"But can they all, or only some of them?"

"All."

"This is good news. Do these persons, the audience, make men better or no?"

"They also."

"And the Senators?"

"The Senators, too."

"And all the people, the voters, do these corrupt young men, or do all these make them better!"

"All they."

"It appears, then, that all the Athenians make men good and virtuous, except me. I alone corrupt them. Is this precisely what you say?"

"You make me out a peculiarly unfortunate

person. But answer me. Is the same true of horses ? Is it true that all men make them good, and that there is one single person who spoils them ? Or is it true that only one man, or a few men, can make horses good—the horse-trainer ; but that the greater part of men, if they have to use and to be with horses, spoil them ? Is it not so with horses and all other animals ? It certainly is. It would be a very fortunate thing for our young men if one man only made them bad, and all the others made them good. But, clearly, Meletus, you show that you have never paid any attention to young men. You show that you know nothing about the matters involved in your accusation of me."

MILL'S EXAMINATION OF VARIOUS DEFINITIONS OF LOGIC.

I. One writer says " Logic is the science and art of Reasoning," that is, it involves the analysis of the mental process employed in Reasoning, and it gives rules for Reasoning. This is right so far. A right understanding of the mental process is the only clue to a proper system of rules.

But the term " Reasoning " abounds in ambiguities. With some it means " syllogising " or Syllogistic Reasoning, " concluding from generals to particulars." With others it means " to infer any assertion from assertions already admitted " ; and so

it would include Induction as well as the demonstrations of Geometry.

But Reasoning, even in the wildest sense of the word, does not include all that Logic embraces according to the best and most current ideas. Mere Arguments or Syllogisms are not the whole of Logic. It includes, according to all Terms and Propositions—Definition and Division.

Even in ordinary conversation we speak more frequently of logical arrangement and of words logically defined than of conclusions logically deduced.

II. Others say “Logic is the science which treats of the operations of the human understanding in the pursuit of truth.”

(The sole object of Logic is the guidance of our own thoughts—the communication of these thoughts to others is studied in Rhetoric. A man might be a perfect Logician if there were only one human being in the world.)

This definition seems too wide. We know truths in two ways—**directly** and of themselves (as axioms, etc.), or **indirectly** through the medium of other truths (as the propositions in Euclid from the Definitions and Axioms). The former method is called Intuition, the latter Inference.

All admit that truths of Consciousness and the study of Intuition, of Ideas, Perceptions, etc., do not belong to Logic. No rules can be given for them.

These and Conception, Perception, Memory, and Belief are treated of in Metaphysics and Psychology.

Logic, then, must be restricted to Inferences.

“Logic is not the science of Belief, but of Proof.”

Logic neither observes, nor invents, nor discovers, but **judges**. It is no part of Logic to say what appearances accompany a violent death. This the surgeon must learn from experience, observation, or books, etc. Logic sits in judgment on the sufficiency of the observation to justify his rules, or on the sufficiency of his rules to justify his conduct. It does not give him proofs, but teaches him what makes them proofs, and how he is to judge them.

III. Logic, then, is “the science of the operations of the understanding, which are subservient to the estimation of Proof or Evidence.”

It includes Naming, Definition, Classification, for these operations serve us to keep our evidences and conclusions ready for use in proving, investigating, etc.

Conception and Memory have no special connexion with Evidence, though it presupposes them.

Our object will be to attempt a correct analysis of the process called Reasoning or Inference, and of such mental operations as are intended to facilitate it, and then to form rules for it.

I do not attempt a **complete** analysis of these intellectual operations, but only such as is necessary for the practical purposes of Logic as an art just

as the Science of Music teaches us to discriminate between musical notes, and to know the combinations of which they are susceptible, but not the number of vibrations in each note.

AN ANALYSIS OF LOCKE ON WORDS.

This is what Mill calls "the **immortal** Third Book."

And Hallam says of it—"Among many excellent things in the 'Essay on Human Understanding,' none are more admirable than much of the Third Book on the nature of words, especially the three chapters on their imperfection and abuse."

"In Port Royal Logic some of this might be found, but nowhere are verbal fallacies, and, above all the sources from which they spring so fully and conclusively exposed." (*Hallam's Literary History*, Vol. iv., p. 147.)

Speaking on the Meanings of Words, Locke says : "I was anxious to stay on an argument that appears new, that by searching it to the bottom I might give occasion to the most negligent to reflect on a mis-carriage little noticed, but most important."

"When we consider how much all sorts of reasoning are pestered by a confused use of words, it will appear important to treat this subject. These faults are not only the greatest hindrances to knowledge, but they even pass for it."

"I shall have done a service to truth if I can make men reflect on their own use of language, and **give them reason to suspect that possibly they may have very good words in their mouths with very uncertain or no meaning**, and that, therefore, they should be **wary**."

"Men are far from having agreed on the number of simple qualities that belong to any complex thing. Nor is this to be wondered at, for it **requires much time, pains, skill, and strict inquiry to make out the meaning of such words**, and most men are deficient in these."

When it is most difficult to know the Meanings of Words.

It is hardest to know the Meaning of Words—

1. When the ideas they stand for are **very complex**.

2. When the ideas they stand for have **no certain connection in nature**.

3. When the meaning of a Word is referred to a **standard**, and that **standard is not easy to be known**.

There are some words which have no meaning at all. They are used to deceive, to make us think we know something, or to cloak an ignorance.*

* Cardinal Manning often asks his adversary what is the "intellectual equivalent" for the phrases he uses.

“I. When a Word stands for a very complex idea it is not easy for men to *form* and *retain* that idea so exactly that it will not vary now and then. Hence such words have seldom in two men the same significance, and even the meaning changes from day to day.”

“II. If men have not standards whereby to adjust the signification of these words, then the signification becomes doubtful.”

“There is scarcely any name of any complex idea which does not admit of much latitude.

The rule of propriety of language itself being nowhere established, it is often matter of dispute whether this meaning or that is more correct, according to usage. Hence, even in men who have a mind to understand each other, the word does not stand for the same thing in the mind of the speaker and the hearer. Thus, though all persons use the names “glory” and “gratitude,” etc., “yet these words seem to have different meanings with different men (or, perhaps, no very definite meaning with any man).”

“The present method of education leads to this inaccuracy, for we learn the **names** of things first, and then the signification of these names (if even then). The result is few go to the trouble afterwards to know the precise meaning of the words, they use so glibly. Hence in most men’s mouths these words are little more than sounds, or at

best have very undetermined meaning. This occurs even with the most intelligent. **Where shall we find a discourse on** 'grace,' 'faith,' 'honour,' 'church,' etc., wherein we shall not easily see that men **have different meanings** for these words? **And so all controversy is about sounds.** Hence in the interpretation of Laws there is no end. Comments beget comments, explanations beget other explanations."

"This inexactness in the meanings of words seems almost unavoidable. You will see at once how doubtful and obscure words are (even though they appear clear) if you try to find out the precise meaning of any word. I once heard some very learned physicians dispute 'If a *liquid* can pass through a nerve.' They disputed for a long time. **I, who suspect that most disputes are about the signification of words,** suggested that they should first decide what they meant by a '**liquid.**' They were much surprised at the proposal, as each thought he knew perfectly well what a 'liquid' was. However, being clever, they consented to do so. Then they found each had a different signification of the word. This made them perceive that the main cause of their dispute was about the meaning of a term, and when this was settled all was clear, and they saw that they differed very little in their opinions."

THE ABUSE OF WORDS.

“ Besides the natural imperfection of language and the obscurity in words that it is very hard to avoid, there are several wilful faults men commit in words.”

“ 1. *Some use words without any clear idea* (or even **any** idea) of the *meaning*. Men sometimes invent words without any definite meaning. This occurs specially in philosophy and religion. For these authors to cover the weakness in their systems coin new words without any definite meaning. Their party afterwards retain these sounds with little or no signification, and do not trouble their heads about the meaning. You can see this especially in metaphysics.”

“ Many of those who use the words ‘wisdom, glory, grace,’ etc., if asked what they meant would not know what to answer—a clear proof that they have no determinate ideas behind these words. This fills their discourse with abundance of empty, unintelligible jargon. Men take the words they find in use, and in order that they may not seem ignorant, they use them confidently without troubling their heads about the meaning, whereby, besides the ease of it, they have the advantage that though they are seldom right, yet it is impossible to prove them wrong.”

“ 2. It is hard to find any discourse on any

subject wherein you may not observe that the same word is sometimes used for one collection of ideas and sometimes for another. A person who would act thus in commerce would be called a cheat, in reasoning he is called a wit. Such subtlety is much admired. Men wishing to be regarded as wise find it a good expedient to cover their ignorance with a web of confused words, which are admired because not understood."

"This learned gibberish prevailed by amusing men with hard words, and trapping them in intricate disputes about unintelligible terms."

"Besides there is no way so good to introduce or defend strange and absurd doctrines as to guard them round with legions of obscure undefined words, which defend these opinions, not by strength, but by the impenetrable obscurity in which they are hidden."

"This system has obscured and perplexed Law and Divinity—has brought confusion and disorder into the affairs of men, and in great measure rendered useless religion and justice."

"There is scarcely any sect of philosophers that has not a distinct set of terms that others understand not. Yet this gibberish, which serves so well to cover ignorance and hide error, seems learned."

"If men would tell what ideas they have for words there could not be half the obscurity and wrangling there is."

"It would be hard to persuade anyone that the words which his father, or schoolmaster, or parson, or doctor used signify nothing. Hence it is so hard to root out error from the mind."

"Men having by long and familiar use annexed certain ideas to words, they are apt to imagine one cannot but understand their meaning when they hear them, as if it were past a doubt that the hearer and the speaker have the same meaning for the word. Hence they presume that when they use a word they thereby set up before another the thing they talk of, never troubling themselves to explain their own meaning, or to understand the meaning of others. Hence noise and wrangling. Yet men think it strange if you ask the meaning of their terms, *though seldom* have two men the same idea for a word. It is hard to name a word which is not an example of this. 'Life' is a very familiar term. Yet what does it mean? 'Is there life in a seed or in an egg? or in a man in a swoon?' Here difficulties arise. I see not why men should be ashamed to ask in what sense a man employs a word. **This abuse of words is most amongst men of letters. Disputes are due to nothing more than this ill-use of words.** What I find most is that men learned in controversy speak different languages."

"I believe that when they quit terms, and

think on things, and know what they think then all think the same thing, but they express it differently."

REMEDIES (NECESSITY FOR).

"I am not so vain as to think I can reform even my own language. To require that all men should use words in the same sense and have clear ideas on them would be to expect they should talk of nothing but what they had clear ideas on. This is absurd. To do so all should be very knowing or very silent. He is a fool who thinks a voluble tongue accompanies a good understanding, or that talking much or little is in proportion to knowledge. Those searching for truth should see how they may avoid ambiguity and uncertainty."

"Who can wonder that all Sciences are so overcharged with obscure and unmeaning words capable of making the most attentive and quick-sighted very little or not at all more knowing since subtlety is so prized; though it consists in the fallacious use of obscure terms and is only fit to make men more conceited in their ignorance and more obstinate in their errors."

"Let us look into books of controversy and we shall see that the effect of obscure terms is only noise about sounds, the controversy is about names not things."

“V.G.—Take the question ‘Whether a bat is a bird or not?’ Here the question is either (1) with those who acknowledge that they have imperfect ideas of one or both of these creatures and then the inquiry is ‘What is a bat?’ and ‘What is necessary to constitute a bird?’ The information is got by examining whether all the ideas included in the idea of a ‘bat’ are necessary and sufficient to constitute a ‘bird.’ This is a question of inquirers who affirm nothing.”

“Or (2) it may be a question where one affirms that a ‘bat is a bird’ and the other denies it. Then the question is merely about the meaning of these two words, since they not having the same ideas for these two names, one holds that a bat is a bird, the other denies it. If they agree about the meaning of the two names it would be impossible to dispute about their agreement or disagreement for they should then clearly see at once whether all the simple ideas contained in the word ‘bird’ were contained in the idea of ‘bat’ or not.”

“Here I desire it to be considered carefully whether the greater part of the disputes of the world are not about the signification of words and whether if the terms were defined all these disputes would not end of themselves.”

“When I shall see any one strip his terms of

ambiguity and obscurity I shall think him a champion for knowledge and truth and not a slave of vain glory and party."

REMEDIES TO BE USED.

"1. Use no word without an idea. This rule will not seem useless, if we reflect how often we have heard such words as 'instinct,' 'sympathy,' etc., used by others in such a way that we might easily conclude that the people had no ideas in their minds for these words, but that they spoke them as sounds and made them serve for reasons. These words have a very definite meaning, but there being no natural connection between these words and the ideas they stand for *they may be learned by rote and writ by men who have no idea for which they stand.*"

2. *"It is very necessary to have a definite meaning for words. 'Justice' every one speaks of, but with a very loose signification unless he resolves it into its components and sees what is necessary for 'Justice.' If one says by 'Justice' I mean 'treatment according to law,' then unless he has a clear idea of what 'law' is, his idea of 'Justice' must be imperfect."*

"This exactness may seem very troublesome, and therefore most men won't mind it. But till

this is done we must expect great confusion in our own minds and much wrangling with others."

"The proper signification and use of words is best learned from those, who, in their writings, had the clearest notions of them."

"Many words indicating complex ideas may be exactly defined, for these combinations being made by men they can explain precisely what they mean by them. It shows great negligence not to state what precisely we mean by the words we use."

"This I have here mentioned to show how important it is for men to define such words. And it must be great want of ingenuity (not to say worse) to refuse to do it *since a definition is the only way* whereby the meaning may be known with certainty. Hence persons who do not act thus cannot be excused. It is easy to frame an idea of '*Justice which shall be our standard, and to refer all acts to it.*' Besides definition is the only means of knowing the meaning of such words, for it is the mind alone that collects the ideas together. They do not exist united in anything in nature."

"Men do not usually explain their words, and so they dispute in words whose meaning is not agreed between them, thinking, by mistake, that

the meaning of a word is certain and the precise ideas it stands for perfectly known, and that it is a shame to be ignorant of it. This is false.

It is no shame for a man not to know the meaning another attaches to a word. He can only ask him his meaning."

"Toga, tunica, pallium are translated by 'gown,' 'coat,' 'cloak,' but we have thereby no more true idea of the forms of these dresses of the Romans than we have of the faces of the tailors who made them. They should be represented by little pictures. So is it with many words in our own language, they convey no ideas to our minds."

"A man should use the same word constantly in the same sense. If **this were done many books might be spared, many controversies ended, many great volumes swollen with ambiguous words would shrink into a very narrow compass, and many philosophical works would be contained in a nutshell.**"

EXAMPLES OF PROPOSITIONS.

(1.) Point out the Subject and Attribute of each of the following Propositions.

(2.) Mention how is the Subject taken in each of the following, also how is the Attribute taken, whether "universally" or "particularly."

(3.) Be sure to **split** up each Proposition into its strict Subject, Attribute and Copula ("is" or "are"), putting the word "some" or "all" before each **Attribute**.

(4.) Convert the following :—

All metals are good conductors of Electricity.

All farmers desire fine weather

All green crops require sunshine for their proper cultivation.

All Authors are jealous of reputation.

All Physicists revel in theories.

All great Musicians are men of exquisite culture and refined taste.

All young people are sadly wanting in common sense.

Some metals melt at a low temperature.

† Some books are amusing.

Some roses are red.

Some rivers are very rapid.

Some very high mountains are dangerous of ascent.

Some Historians cannot be trusted.

Some crops do not thrive in a moist climate. —

Some eyes fail to recognize different colours.

Some novels are degrading.

No horses have cloven feet.

No Physicist now maintains that the Sun
revolves round the Earth.

No Englishman is black.

No American thinks poorly of his country.

No true Frenchman fails in politeness.

No Medical man refuses his aid in case of
accident.

No Chemist now rejects the Atomic Theory
No plants flourish without Oxygen.

No writer, who has not lived through the
Famine, can give any adequate idea of
the sufferings endured by the people
during that time.

Some triangles are not equilateral.

Some students are not industrious.

Some Irishmen are not ashamed to deny
their country.

Some flowers have no sweet smell.

Some rivers are not rapid.

Some clocks do not indicate the correct time.

None but Irishmen are Munstermen.

None but Europeans are Frenchmen.

None but Northerners pronounce these words
after this fashion.

Extreme Radicals alone will vote for this
measure.

Corkmen and Kerry men are the only people
who have this peculiar accent.

Yorkshiremen alone use this phrase.
 Birds sing. Fishes swim. Dogs bark.
 Metals melt at high temperatures.
 Clever men have large heads.
 Most men are deceived by a long argument.
 Few can detect this Fallacy.
 Most modern Logicians do not treat of
 Certitude.

EXAMPLES OF SYLLOGISMS.

Test the following Syllogisms :—

(1.) All ~~tyrants~~ deserve death.

~~Cæsar was a tyrant.~~

Therefore, Cæsar deserved death.

(2.) All Irishmen are white.

3 John is white.

Therefore, John is an Irishman.

(3.) All wise men are good.

Plato was wise.

Therefore, Plato was good.

(4.) All wits are dreaded.

All wits are admired.

Therefore, some who are admired are
 dreaded.

(5.) All vices are reprehensible.

Emulation is not reprehensible.

Therefore, it is not a vice.

(6.) All vices are reprehensible.

Emulation is not a vice.

Therefore, it is not reprehensible,

(7.) All matter is created.

But the Heavenly Bodies are material.

Therefore, they were created.

(8.) He who performs his duty is a truly good man.

John performs his duty.

Therefore, he is a truly good man

(9.) All birds lay eggs.

Some animals do not lay eggs.

Therefore, some animals are not birds.

(10.) No sparrow is a thrush. *~~~~~*

y All sparrows are birds. *~~~~~*

Therefore, no bird is a thrush, or some birds are not thrushes.

(11.) Some acts of homicide are laudable.

All acts of homicide are cruel. *+*

Therefore, some cruel acts are laudable.

(12.) No negro is a Hindoo.

All Hindoos are black. *+*

Therefore, some blacks are not negroes.

(13.) All ruminant animals have four stomachs.

No animal with four stomachs is carnivorous.

Therefore, no carnivorous animal is ruminant.

(14.) Some learned men have become mad.

He is not learned. *+*

Therefore, he will not become mad.

(15.) The so-called Reformers were bitter enemies of the Papal Supremacy.

John was a Reformer. *+*

Therefore, he was an enemy of Papal Supremacy.

(16.) Some animals are bipeds.

✓ Some beasts are not bipeds.

Therefore, some beasts are not animals.

(17.) All true patriots are prepared to die for their country.

Some great statesmen were not prepared to die for their country.

Therefore, some great statesmen were not true patriots.

(18.) Some slaves are happy.

All slaves are wronged.

Therefore, some who are wronged are happy.

(19.) No persons destitute of imagination are true poets.

Some persons destitute of imagination are good Logicians.

Therefore, some true poets are not good Logicians.

(20.) The innocent are not to be punished.

John is not to be punished.

Therefore, he is innocent.

(21.) All men are entitled to liberty.

Negroes are men.

Therefore, negroes are entitled to liberty.

(22.) None but Frenchmen hold this theory.

John does not hold this theory.

Therefore, he is not a Frenchman.

(23.) None who are liable to err should refuse advice.

But all men are liable to err.

Therefore, no man should refuse advice.

(24.) All clever men have large heads.

James has a large head.

Therefore, he is a clever man.

(25.) All modern Geologists of repute have abandoned this theory.

Jenkins has abandoned it.

Therefore, he is a Geologist of repute.

(26.) True fishes respire water containing air.

Whales do not respire water containing air.

Therefore, whales are not true fishes.

(27.) Peter is a friend of Paul.

Paul is a friend of John.

Therefore, Peter is a friend of John.

(28.) All the truly poor should be assisted by alms.

The avaricious are truly poor.

Therefore, they are to be assisted by alms.

(29.) No tale-bearer is worthy of confidence.

All tale-bearers are great talkers.

Therefore, no great talkers are worthy of confidence.

(30.) All traitors deserve capital punishment.

Some murderers are not traitors.

Therefore, some murderers do not deserve capital punishment.

(31.) Some who are indisposed to flatter retain unpolished habits.

All virtuous men are indisposed to flatter.

Therefore, some virtuous men retain unpolished habits.

SECTION I.

EXAMPLES OF SINGLE SENTENCES FOR ANALYSIS.

(1.) We made so many deviations up and down lanes, and were such a long time delivering a bedstead at a public-house, and calling at other places, that I was quite tired and very glad when we saw Yarmouth.

(2.) As we drew a little nearer, and saw the whole adjacent prospect lying a straight low line under the sky, I hinted that a mound or so might have improved it.

(3.) When we got into the street (which was strange enough to me), and smelt the fish, and pitch, and oakum and tar, and saw the sailors walking about, and the carts jingling up and down over the stones, I felt I had done so busy a place an injustice.

(4.) Ham, carrying me on his back and a small box of ours under his arm, and Peggotty, carrying another small box of ours, we turned down lanes bestrewn with bits of ships and little hillocks of sand until we came out on the dull waste I had already seen at a distance.

(5.) I looked in all directions as far as I could stare over the wilderness, and away at the sea, and away at the river, but no house could I make out.

(6.) There was a table, and a Dutch clock, and a chest of drawers, and on the chest of drawers there was a tea-tray with a painting on it of a lady with a parasol taking a walk with a military-looking child who was trundling a hoop.

(7.) We were welcomed by a very civil woman in a white apron, whom I had seen curtseying at the door when I was on Ham's back about a quarter of a mile off.

MACAULAY.

(1.) Towards the close of the year 1823 Mr. Lemon, deputy keeper of the State papers, in the course of his researches among the presses of his office, met with a large Latin manuscript. With it were found corrected copies of foreign

despatches written by Milton while he filled the office of Secretary, and several papers relating to the Popish trials. On examination, the large manuscript proved to be the long-lost Essay on the Doctrines of Christianity which, according to Wood and Toland, Milton finished after the Restoration.

(2.) Perhaps no person can be a poet, or can even enjoy poetry, without a certain unsoundness of mind, if anything which gives so much pleasure ought to be called unsoundness. By poetry we mean not all writing in verse, nor even all good writing in verse. Our definition excludes many metrical compositions which on other grounds deserve the highest praise. By poetry we mean the art of employing words in such a manner as to produce an illusion on the imagination, the art of doing by means of words what the painter does by means of colours. Thus the greatest of poets has described it in lines universally admired for the vigour and felicity of their diction, and still more valuable on account of the just notion they convey of the art in which he excelled.

As imagination bodies forth
The forms of things unknown, the poet's pen
Turns them to shapes, and gives to airy nothing
A local habitation and a name.

SECTION II.

SPECIMENS OF SHORT STORIES AND POEMS TO BE ANALYSED.

THE BEES, THE DRONES, AND THE WASP.

A parcel of drones having got into a hive disputed with the Bees the right to the honey and combs. The Bees were obliged to go to law with them, and the Wasp being well acquainted with the nature of each, was appointed judge of the case. Accordingly, "Gentlemen," says he, speaking to both plaintiff and defendant, "the usual method of proceeding in these courts is rather costly and slow withal;

and, therefore, as you are both my friends and I wish you well, I desire that you refer the matter to me, and I will decide betwixt you instantly." They both were pleased with the offer, and returned him thanks. "Well, then," says he, "that it may appear who are the just proprietors of these honeycombs, for being both so nearly alike, I must needs own the point is somewhat dubious. Do you," addressing himself to the Bees, "take one hive: you," speaking to the Drones, "another; and set to work making honey as fast you can, that we may know by the taste and colour of it, who has the best title to this in dispute." The Bees readily accepted the proposal, but the Drones would not agree to it. And so Judge Wasp, without any further ceremony, declared in favour of the former.

Give the moral to this fable.

THE SPARROW AND THE HARE.

A Hare having been seized by an Eagle, cried out in a most woeful manner. A Sparrow that sat on a tree and saw it could not forbear from being unseasonably witty, and called out to the Hare, "So ho! What! sit there and be killed. I dare say if you would but try so swift a creature as you would easily escape from the Eagle." As he was going on with his raillery down came a Hawk, snapped up the Sparrow, and notwithstanding his vain cries and lamentations began in an instant to devour him. The Hare, just expiring, yet received comfort from this accident, even in the agonies of death, and addressing her last words to the Sparrow said, "You who just now insulted my misfortunes with so much security as you thought, will show us how well you can bear a similar fate now that it has befallen you."

ROSABELLE.

O listen, listen, ladies gay,
No haughty feat of arms I tell;
Soft is the note and sad the lay
That mourns the lovely Rosabelle.

"Moor, moor the bark ye gallant crew,
And gentle lady deign to stay:
Rest thee in Castle Ravensheuch,
Nor tempt the stormy frith to-day.

"The blackening wave is edged with white
To inch and rock the sea-mews fly,
The fishers have heard the water sprite
Whose screams forebode that wreck is nigh.

"Last night the gifted seer did view
A wet shroud swathed round lady gay.
Then stay thee fair in Ravensheuch,
Why cross the gloomy firth to-day?"

"'Tis not because Lord Lindesay's heir
To-night at Roslin leads the ball,
But that my lady mother there
Sits lonely in her castle hall.

"'Tis not because the ring they ride,
And Lindesay at the ring rides well,
But that my sire the wine will chide
If 'tis not filled by Rosabelle "

O'er Roslin on that dreary night
A wondrous blaze was seen to gleam—
'Twas broader than the watchfire's light,
And redder than the bright moonbeam.

It glared on Roslin's castled rock,
It ruddied all the copse-wood glen,
'Twas seen from Dryden's groves of oak,
And seen from cavern'd Hawthornden.

Seem'd all on fire that chapel proud,
Where Roslin's chiefs uncoffin'd lie,
Each baron for a sable shroud
Sheath'd in his iron panoply.

Seem'd all on fire within, around
Deep sacristy and altar's pale;
Shone every pillar foliage-bound
And glimmer'd all the dead men's mail.

Blazed battlement and pinnet high,
Blazed every rose-carved buttress fair,
So still they blaze when fate is nigh
The lordly line of high Saint Clair.

There are twenty of Roslin's barons bold
Lie buried within that proud chapelle;
Each one the holy vault doth hold,
But the sea holds lovely Rosabelle.

And each Saint Clair was buried there
With candle, with book, and with knell,
But the sea caves rung and the wild waves sung
The dirge of lovely Rosabelle.

PILGRIM FATHERS.

The breaking waves dash'd high
On a stern and rock-bound coast,
And the woods against a stormy sky
Their giant branches toss'd.

And the heavy night hung dark,
The hills and waters o'er,
When a band of exiles moor'd their bark
On the wild New England shore.

Not as the conquer comes
They the true-hearted came.
Not with the roll of the stirring drums
And the trumpet that sings of fame.

Not as the flying come,
In silence and in fear:
They shook the depths of the desert's gloom
With their hymns of lofty cheer.

Amidst the storm they sang
Till the stars heard and the sea,
And the sounding aisles of the dim woods rang
To the anthem of the free.

The ocean eagle soar'd
 From his nest by the white wave's foam,
 And the rocking pines of the forest roar'd—
 Such was their welcome home.

There were men with hoary hair
 Amidst that pilgrim band,
 Why had they come to wither there,
 Away from their childhood's land?

There was woman's fearless eye
 Lit by her deep love's truth.
 There was manhood's brow serenely high
 And the fiery heart of youth.

What sought they thus afar?
 Bright jewels of the mine?
 The wealth of seas? the spoils of war?
 No!—'twas a faith's pure shrine.

Yes, call that holy ground
 Which first their bare feet trod;
 They have left unstain'd what there they found—
 Freedom to worship God!

SECTION III.

MORE DIFFICULT PARAGRAPHS FOR ANALYSIS.

FOURTH EXAMPLE.

ADDISON (*Spectator*, No. 124).

(a) (A man who publishes his works in a volume has an infinite advantage over one who communicates his writings to the world in loose tracts and single pieces.) (b) (We do not expect to meet with anything in a bulky volume till after some heavy preamble, and several words, of course,

to prepare the reader for what follows. Nay, authors have established it as a kind of rule, that a man ought to be dull sometimes; as the most severe reader makes allowances for many rests and nodding places in a voluminous writer. This gave occasion to the famous Greek proverb which I have chosen for my motto, "That a great book is a great evil.") On the contrary, those who publish their thoughts in distinct sheets, and, as it were, by piece-meal, have none of these advantages. We must immediately fall into our subject, and treat every part of it in a lively manner or our papers are thrown by as dull and insipid; our matter must be close together, and either be wholly new in itself or in the turn it receives from our expressions. (Were the books of our best authors thus to be retailed to the public, and every page submitted to the taste of forty or fifty thousand readers, I am afraid we should complain of many flat expressions, trivial observations, beaten topics, and common thoughts which go off very well in the lump.) At the same time, notwithstanding some papers may be made up of broken hints and irregular sketches, it is often expected that every sheet should be a kind of treatise, and make out in thought what it wants in bulk; that a point of humour should be worked up in all its parts and a subject touched upon in its most essential articles, without the repetitions, tautologies and enlargements that are indulged to longer labours. The ordinary writers of morality prescribe to the readers after the Galenic way, their medicines are made up in large quantities. An essay-writer must practice in the chemical method, and give the virtue of a full draught in a few drops. (Were all books reduced thus to their quintessence many a bulky author would make his appearance in a penny paper: there would be scarce such a thing in nature as a folio: the works of an age would be contained on a few shelves; not to mention millions of volumes that would be utterly annihilated.")

ANALYSIS OF FOREGOING PASSAGE.

Again we must ask ourselves, which is the principal assertion in this passage? Clearly it is the assertion marked (a) that "A man who puts his

works in a volume has infinite advantages over one who writes essays."

The next passage in brackets marked (b) proves this by showing that a voluminous writer may have many nodding-places and preambles and may be dull, but an essay-writer must be lively—must have matter packed close, and must be novel and fresh. It is expected of him that every sheet should be a treatise—that a point of humour should be worked up, and that no repetitions should occur.

The following passages marked (c) point out the result of this, viz. :—that if old authors were treated thus we should complain of many flat expressions—and they would shrink into a penny paper—and millions of volumes would disappear.

This abstract might be still more condensed as follows:—"A writer of a volume has great advantages over an essay-writer." Why? Prove this. Mention the advantages. "He may be dull, may nod, etc." "The other must be condensed and sprightly." The result of writing thus would be "smaller books and many annihilated."

FIFTH EXAMPLE.

Extract from Pitt.

"The atrocious crime of being a young man, which the Honourable Gentleman has with such spirit and decency charged upon me, I shall neither attempt to palliate nor deny, but content myself with wishing that I may be one

of those whose follies may cease with their youth, and not of that number who are ignorant in spite of experience. Whether youth can be imputed to any man as a reproach I will not assume the province of determining; but **surely age may become justly contemptible** if the opportunities which it brings have passed away without improvement, and vice appears to prevail when the passions have subsided. The wretch who, after having seen the consequences of a thousand errors, still continues to blunder on, and whose age has only added obstinacy to stupidity, is surely the object of either abhorrence or contempt, and deserves not that his grey head should secure him from insults. Much more is he to be abhorred who, as he has advanced in age, has receded from virtue, and who becomes more wicked with less temptation; who prostitutes himself for money which he cannot enjoy, and spends the remains of his life in the ruin of his country."

ANALYSIS OF FOREGOING PASSAGE.

Where is the principal verb (or assertion) in this passage? It is, "I shall neither attempt to palliate nor deny."

What will you not deny? "The atrocious crime of being a young man."

The second assertion is—"Youth may not be a crime, but age is, if the wretch continues to blunder and gets obstinate in stupidity or more wicked."

SIXTH EXAMPLE.

Another Extract from Pitt.

"I have been accused of acting a theatrical part. A theatrical part may either imply some peculiarities of gesture or a dissimulation of my real sentiments and an adoption of the opinions and language of another man. In the first sense the charge is too trifling to be confuted, and de-

serves only to be mentioned that it may be despised. I am at liberty, like every other man, to use my own language, and, though I may, perhaps, have some ambition, yet, to please this gentleman, I shall not lay myself under any restraint nor very solicitously copy his diction or his mien, however matured by age and modelled by experience. If any man shall, by charging me with theatrical behaviour, imply that I utter any sentiments but my own, I shall treat him as a calumniator and a villain; nor shall any protection shelter him from the treatment which he deserves. I shall on such an occasion, without scruple, trample upon all those forms with which wealth and dignity entrench themselves; nor shall anything but age restrain my resentment—age which always brings one privilege: that of being ignorant and supercilious without punishment.”

ANALYSIS OF FOREGOING PASSAGE.

Here the assertion is: “I have been accused of acting a part.”

What does this mean? “It may mean I have some peculiarities of gesture, or it may mean I am uttering sentiments not my own.”

If the first, it is too trifling to be confuted.

If the second, I shall treat my accuser as a calumniator and a villain.

How do this? I shall trample on all forms, nor shall anything restrain me but age.

Why age? Because it is privileged to be ignorant.

NOTE.

It is easier to analyse some authors than others. Those are most easily abridged that have

one principal thought, in which the strength of the reasoning consists, and who make the secondary particulars and embellishing ideas subordinate to it.

Those are the most difficult to be abridged who, having an indistinct view of their subject, confound the principal thought with the secondary ones, and leave us in doubt as to the most important.

Of course, persons should begin to analyse the easier authors, such as Addison.

SECTION IV.

LONGER EXTRACTS FOR ANALYSIS.

NOTE.—The **separate** sentences in these Extracts would do **excellently** for Specimens of *Single Sentences* in which the various *attendant circumstances of time, place, &c., &c.*, are introduced. They would also furnish models of Extracts where the same thing is stated in different words and **positively** and **negatively**, *v.g.*: “I am going to inquire why it is, &c.” “I am not going to enquire.” “I do not propose to prove that knaves and fools we are not, &c.” “I do but propose to investigate how Catholics come to be spurned, &c.”

On this point also see Extracts from Macaulay in Section I., p. 215, on Poetry. See also his Essay on *Dryden* for his definition of Poetry. His Essay on History for definition of History. McCullagh's

Essay on History for same. Balmez' definition of Toleration in his *European Civilization*, and Newman's definition of Poetry in his Essay on that subject.

FREE TRADE.

BY LORD MACAULAY (SPEECH ON THE CORN LAWS).

Never was there a cry so absurd and mischievous as this cry against cheap loaves. It seems strange that people who profess to hold new theories in abhorrence, people who are always talking about the wisdom of our ancestors, should insist on our receiving as an undoubted truth a strange paradox never heard of from the creation of the world till the nineteenth century. Begin with the most ancient book extant, the Book of Genesis, and come down to the parliamentary debates of 1815; and I will venture to say that you will find that, on this point, the party which affects profound reverence for antiquity and prescription has against it the unanimous voice of thirty-three centuries. If there be anything in which all peoples, of all nations and languages, Jews, Greeks, Romans, Italians, Frenchmen, Englishmen, have agreed, it has been this, that the dearness of food is a great evil to the poor. Surely, the arguments which are to counterbalance such a mass of authority ought to be weighty. What then are those arguments? I know of only one. If any gentleman is acquainted with any other, I wish that he would communicate it to us; and I will engage that he shall have a fair and full hearing. The only argument that I know of is this, that there are some countries in the world where food is cheaper than in England, and where the people are more miserable than in England. Bengal has been mentioned. But Poland is the favourite case. Whenever we ask why there should not be a free trade in corn between the Vistula and the Thames, the answer is, "Do you wish our labourers to be reduced to the condition of the peasants of the Vistula?" Was such reasoning ever heard before? See how readily it may be turned against those who use it. Corn is cheaper at Cincinnati than here; but the wages of the labourer are much higher at Cincinnati than here: therefore,

the lower the price of food, the higher the wages will be. This reasoning is just as good as the reasoning of our adversaries: that is to say, it is good for nothing. It is not one single cause that makes nations either prosperous or miserable. No friend of free trade is such an idiot as to say that free trade is the only valuable thing in the world; that religion, government, police, education, the administration of justice, public expenditure, foreign relations, have nothing whatever to do with the well being of nations; that people sunk in superstition, slavery, barbarism, must be happy if they have only cheap food. These gentlemen take the most unfortunate country in the world, a country which, while it had an independent government, had the very worst of independent governments; the sovereign a mere phantom; the nobles defying him and quarrelling with each other; the great body of the population in a state of servitude; no middle class; no manufactures; scarcely any trade, and that in the hands of Jew pedlers. Such was Poland while it was a separate kingdom. But foreign invaders came down upon it. It was conquered: it was reconquered: it was partitioned: it was repartitioned: it is now under a government of which I will not trust myself to speak. This is the country to which these gentlemen go to study the effect of low prices. When they wish to ascertain the effect of high prices, they take our own country; a country which has been during many generations the best governed in Europe; a country where personal slavery has been unknown during ages; a country which enjoys the blessings of a pure religion, of freedom, of order; a country long secured by the sea against invasion; a country in which the oldest man living has never seen a foreign flag except as a trophy. Between these two countries our political philosophers institute a comparison. They find the Briton better off than the Pole; and they immediately come to the conclusion that the Briton is so well off because his bread is dear, and the Pole is so ill off because his bread is cheap. Why, is there a single good which in this way I could not prove to be an evil or a single evil which I could not prove to be a good? Take lameness. I will prove that it is the best thing in the world to be lame: for I can show you men who are lame, and yet much happier than many men who have the full use of their legs. I will prove health to be a calamity. For I can easily find you people in excellent health whose fortunes have been

wrecked, whose character has been blasted, and who are more wretched than many invalids. But is that the way in which any man of common sense reasons? No; the question is: Would not the lame man be happier if you restored to him the use of his limbs? Would not the healthy man be more wretched if he had gout and rheumatism in addition to all his other calamities? Would not the Englishman be better off if food were as cheap here as in Poland? Would not the Pole be more miserable if food were as dear in Poland as here? More miserable indeed he would not long be: for he would be dead in a month.

It is evident that the true way of determining the question which we are considering, is to compare the state of a society when food is cheap with the state of that same society when food is dear; and this is a comparison which we can very easily make. We have only to recall to our memory what we have ourselves seen within the last ten years. Take the year 1835. Food was cheap then; and the capitalist prospered greatly. But was the labouring man miserable? On the contrary, it is notorious that work was plentiful, that wages were high, that the common people were thriving and contented. Then came a change like that in Pharaoh's dream. The thin ears had blighted the full ears; the lean kine had devoured the fat kine; the days of plenty were over, and the days of death had arrived. In 1841 the capitalist was doubtless distressed. But will anybody tell me that the capitalist was the only sufferer, or the chief sufferer? Have we forgotten what was the condition of the working people in that unhappy year? So visible was the misery of the manufacturing towns that a man of sensibility could hardly bear to pass through them. Everywhere he found filth and nakedness, and plaintive voices, and wasted forms, and haggard faces. Politicians who had never been thought alarmists began to tremble for the very foundations of society. First the mills were put on short time. Then they ceased to work at all. Then went to pledge the scanty property of the artisan—first, his little luxuries, then his comforts, then his necessities. The hovels were stripped till they were left as bare as the wigwam of a Dogribbed Indian. Alone, amidst the general misery, the shop with the three golden balls prospered, and was crammed from cellar to garret with the clocks, and the tables, and the kettles, and the blankets, and the Bibles of the poor. I remember well

the effect which was produced in London by the unwonted sight of the huge pieces of cannon which were going northward to overawe the starving population of Lancashire. These evil days passed away. Since that time we have again had cheap bread. The capitalist has been a gainer. It was fit that he should be a gainer. But has he been the only gainer? Will those who are always telling us that the Polish labourer is worse off than the English labourer venture to tell us that the English labourer was worse off in 1844 than in 1841? Have we not everywhere seen the goods of the poor coming back from the magazine of the pawnbroker? Have we not seen in the house of the working-man, in his clothing, in his very looks as he passed us in the streets, that he was a happier being? As to his pleasures, and especially as to the most innocent, the most salutary, of his pleasures, ask your own most intelligent and useful fellow-citizen, Mr. Robert Chambers, what sale popular books had in the year 1841, and what sale they had last year. I am assured that, in one week of 1845, the sums paid in wages within twenty miles of Manchester exceeded by a million and a half the sums paid in the corresponding week of 1841.

ON EDUCATION.

BY LORD MACAULAY (SPEECH IN PARLIAMENT, 1847).

I believe, Sir, that it is the right and duty of the State to provide means of education for the common people. This proposition seems to me to be implied in every definition that has ever yet been given of the functions of a government. About the extent of those functions there has been much difference of opinion among ingenious men. (There are some who hold that it is the business of a government to meddle with every part of the system of human life, to regulate trade by bounties and prohibitions, to regulate expenditure by sumptuary laws, to regulate literature by a censorship, to regulate religion by an inquisition. Others go to the opposite extreme, and assign to government a very narrow sphere of action.) But the very narrowest sphere

that ever was assigned to governments by any school of political philosophy is quite wide enough for my purpose. On one point all the disputants are agreed. They unanimously acknowledge that it is the duty of every government to take order for giving security to the persons and property of the members of the community.

This being admitted, can it be denied that the education of the common people is a most effectual means of securing our persons and our property? Let Adam Smith answer that question for me. His authority, always high, is, on this subject, entitled to peculiar respect, because he extremely disliked busy, prying, interfering governments. He was for leaving literature, arts, sciences, to take care of themselves. He was not friendly to ecclesiastical establishments. He was of opinion that the State ought not to meddle with the education of the rich. But he has expressly told us that a distinction is to be made, particularly in a commercial and highly civilised society, between the education of the rich and the education of the poor. The education of the poor, he says, is a matter which deeply concerns the commonwealth. Just as the magistrate ought to interfere for the purpose of preventing the leprosy from spreading among the people, he ought to interfere for the purpose of stopping the progress of the moral distempers which are inseparable from ignorance. Nor can this duty be neglected without danger to the public peace. If you leave the multitude uninstructed, there is serious risk that religious animosities may produce the most dreadful disorders. The most dreadful disorders! Those are Adam Smith's own words; and prophetic words they were. Scarcely had he given this warning to our rulers when his prediction was fulfilled in a manner never to be forgotten. I speak of the No Popery riots of 1780. I do not know that I could find in all history a stronger proof of the proposition that the ignorance of the common people makes the property, the limbs, the lives of all classes insecure. Without the shadow of a grievance, at the summons of a madman, a hundred thousand people rise in insurrection. During a whole week there is anarchy in the greatest and wealthiest of European cities. The parliament is besieged. Your predecessor sits trembling in his chair, and expects every moment to see the door beaten in by the ruffians whose roar he hears all round the house. The peers are pulled out of their coaches. The bishops in their lawn are

forced to fly over the tiles. The chapels of foreign ambassadors, buildings made sacred by the law of nations, are destroyed. The house of the Chief Justice is demolished. The little children of the Prime Minister are taken out of their beds and laid in their night clothes on the table of the Horse Guards, the only safe asylum from the fury of the rabble. The prisons are opened. Highwaymen, house-breakers, murderers, come forth to swell the mob by which they have been set free. Thirty-six fires are blazing at once in London. Then comes the retribution. Count up all the wretches who were shot, who were hanged, who were crushed, who drank themselves to death at the rivers of gin which ran down Holborn Hill, and you will find that battles have been lost and won with a smaller sacrifice of human life. And what was the cause of this calamity, a calamity which, in the history of London, ranks with the great plague and the great fire? The cause was the ignorance of a population which had been suffered, in the neighbourhood of palaces, theatres, temples, to grow up as rude and as stupid as any tribe of tattooed cannibals in New Zealand—I might say as any drove of beasts in Smithfield Market.

The instance is striking, but it is not solitary. To the same cause are to be ascribed the riots of Nottingham, the sack of Bristol, all the outrages of Ludd, and Swing, and Rebecca, beautiful and costly machinery broken to pieces in Yorkshire, barns and haystacks blazing in Kent, fences and buildings pulled down in Wales. Could such things have been done in a country in which the mind of the labourer had been opened by education, in which he had been taught to find pleasure in the exercise of his intellect, taught to revere his Maker, taught to respect legitimate authority, and taught, at the same time, to seek the redress of real wrongs by peaceful and constitutional means?

This, then, is my argument. It is the duty of Government to protect our persons and property from danger. The gross ignorance of the common people is a principal cause of danger to our persons and property. Therefore, it is the duty of the Government to take care that the common people shall not be grossly ignorant

HOW TO REASON

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